

DECEMBER, 1959

AMATEUR RADIO



CHRISTMAS AGAIN! BUT WE DON'T MIND
because it gives us the opportunity of wishing you
THE COMPLIMENTS of the FESTIVE SEASON!

FROM THE MANAGEMENT AND STAFF OF



Aegis products available from leading dealers in all States including J. H. McGrath & Co. Pty. Ltd., Melbourne.

AEGIS

Australia's own dependable brand of
STEREO & HI-FIDELITY UNITS!

AEGIS 5/10 ULTRA LINEAR BASIC AMP

AEGIS AMPLIFIER CONTROL UNIT

AEGIS PRE-AMPLIFIER Mark I

AEGIS PRE-AMPLIFIER Mark 2

AEGIS FIDELITY TUNER Mark 2

AEGIS FIDELITY TUNER MARK 2
AEGIS FIDELITY TUNER Mark 1

REGIS FIDELITY TUNER MARK I
incorporating its OWN POWER SUPPLY

AEGIS STEREOPHONIC CONTROL UNIT

for correct Stereophonic coupling of two

FIRST RELEASE THIS MONTH

of the New Aegis Ultra-Linear Integrated Stereo "Six-88" Amplifier!

AEGIS MANUFACTURING CO. PTY. LTD.
208 LT. LONSDALE ST., MELB., C.I. VICTORIA. PHONE FB 3731

2/-

AMATEUR RADIO

"HAM" RADIO SUPPLIERS

(KEN MILLBOURN, PROP.)

5A MELVILLE STREET, HAWTHORN, VICTORIA

North Balwyn Tram Passes Corner, near Vogue Theatre.

Phone: WM 6465

Money Orders and Postal Notes payable North Hawthorn P.O. Packing Charge on all goods over 10 lbs. in weight, 5/- extra.

SPECIAL PURCHASE!

AMERICAN RADAR L.F.F.

RT24/APX1

44 Valves: 6C4, 6AG5, 6J36, VR150/30, 5Y3GT, 9006, 2D21, 12V, blower motor, 24v, shunt motor, host of resistors, condensers, microswitches, valve sockets, etc, etc. Ideal for wrecking.
Snap this up at £12/10/0

STEP-DOWN TRANSFORMERS

240 Volt to 32 Volt 20 V.A.
New condition, in carton. £1/10/0.

ATR2C TRANSCEIVERS

Portable. Complete with headphones, microphone, a.c. power supply.
£50/0/0

ELECTROLYTIC CONDENSERS

Dubilier 8 uF. and 16 uF., 600v.
5/- each

SCR536 TRANSCEIVERS

American Handy-Talkie. Good condition. Supplied with Valves, Coils and Crystals. £6/12/6

SELSYN MOTORS

2 inch English Mk. I, 48 volt A.C. working. £2/10/0 pair.

CAR RADIO SUPPRESSORS

Spark Plug Type 2/- each, Distributor Type 2/- each, or 12 for £1.

APN4 LORAN RECEIVERS

Complete with Valves. Contains: 5U4, VR105, 6H6, 6SA7, 6SL7, 6SN7, 6SJ7, four 6SK7, two 2X2, three 6B4. Ideal for wrecking. Packed in case.
£7/10/0

VALVE SPECIALS!

20 for 20/-: 954, 7193
12 for 20/-: EF50, 6H6, VT127
10 for 20/-: TC7, EA50, IP5, 955, 6AC7
8 for 20/-: 6SH7GT
7 for 20/-: IC7
5 for 20/-: 6C4, 6K7
3 for 20/-: 956, VT501, 2X2, 12SF7

CO-AXIAL CABLE

100 ohm co-ax. cable, 1/2" diam, 2/- yd.
98 ohm co-ax. cable, 1/2" diam, in 100 yard rolls £7/10/0, or 1/9 yd.
50 ohm co-ax. cable, 1/2" diam. Cut to any length. 2/- yd.

CATHODE RAY TUBES

7" 7BP7, 10/-, 3" 3BP1, 45/-.

ACORN VALVE SOCKETS

Ceramic type. 3/6.

CALL BOOKS — LOG BOOKS

1959-60 Call Books 6/-; Log Books 4/6.

VALVES

LOOK AT THESE BARGAINS

1H5	5/-	TC5	5/-
1H6	3/6	TE6	3/6
1K4	5/-	TWT	2/6
1K5	2/6	12AH7	7/6
1K7	5/-	12J5	7/6
1M5	5/-	12SA7	10/-
1Q5	5/-	12SC7	2/6
1R5	10/-	12S37	10/-
1S5	10/-	12SK7	5/-
1T4	7/6	12SQ7GT	2/6
2A5	10/-	12SR7	5/-
2X2	7/6	2Z5	5/-
3R4	7/8	45	5/-
5V4G	15/11	75	2/6
6A3	7/6	78	2/-
6AG5	7/6	160TH	35/-
6AG7	12/6	364H	£1
6AJ5	7/6	717A	12/6
6AG8	12/6	726A	7/6
6B7	7/6	815	25/-
6C5	5/-	830B	7/6
6C6	5/-	833A	£1.5
6CB	5/-	866/DQ2	£1
6D6	5/-	885	7/6
6F6G	10/-	956	5/-
6H6	2/-	958A	2/6
6J5GT	7/6	1626	5/-
6J6	12/6	1629	5/-
6K6G	7/6	1851	5/-
6K7G	5/-	2031	7/6
6L7	5/-	9003	7/6
EN7	10/-	9006	5/-
EN8	15/-	AV11	2/6
6R7	5/-	CV6	2/-
6SA7	7/6	ECH3	5/-
6SC7	7/6	EK32	10/-
6SF7	12/6	GL446A	12/6
6SG7	12/6	VR50	15/-
6SJ7GT	12/6	VR100	5/-
6SL7	12/6	VR101	5/-
6SN7GT	12/6	VR102	5/-
6SH7G	4/-	VR136/RL7	1/6
6S87	7/6	VR150	12/6
6X5	10/-	VT50	2/6
TA6	5/-	VT52	10/-
7A8	3/6	VT501	7/6

108 MK. II. TRANSCEIVERS

Portable; complete with headphones, valves, microphone, cables, etc. Freq. range: 7 to 9 Mc. Bargain at £7/10/0.

128 PORTABLE TRANSCEIVERS

Complete with headphones, microphone, cables. Contains nine miniature valves (1.4 volt series). Bargain £9/7/6.

COMPLIMENTS OF SEASON

We extend to our many Clients a Merry Christmas and Happy New Year.

SET OF VALVES FOR COMMAND TRANSMITTER

Two 1625, one 1626, one 1629.
New in carton. 15/- a Set.

SET OF VALVES FOR COMMAND RECEIVER

Three 12SK7, one 12L8, one 12SR7, one 12AG6. New in carton. £1/0/0 a Set.

CRYSTAL & COIL KITS

For SCR536 Walkie Talkie.
4 Mc. to 5 Mc. approx.
£2/10/0 Set.

SCR522 TRANSCEIVERS

Freq. range: 100 to 150 Mc. Complete with Valves, including 832s.
As they come—£10/0/0

RADAR TRANSCEIVERS

RT45/TPX1

American, brand new. Freq. range: 150 Mc. to 190 Mc. Suitable for conversion t.v. field strength meter. 30 Mc. i.f. strip, two r.f. stages. 16 Valves: 955, 956, 6SL7, 6SN7, 2C26, 2X2, 5U4, 6AC7, 6V6, 6H6. Blower motor, split-stator condenser (15 x 15 pF.), connectors, switches, plugs, condensers, and resistors.
Bargain at £10/0/0

AMERICAN L.F.F. UNITS

Complete with valves and genemotor.
Bargain at £5/17/6.

A.W.A. V.H.F. MOBILE XMITTER

F.M. Freq. range: 156-172 Mc. Crystal controlled, complete with miniature valves, 2E26s and vibrator supply.
A Gift at £12/10/0

TYPE "S" POWER SUPPLY

230 Volt A.C. in good condition.
£25/0/0

COAX CONNECTORS

American Ampenol, 7/6 pair.

RIGHT ANGLE PLUGS

American Ampenol, 2/6 each.

MIN. VARIABLE CAPACITORS

Screwdriver adjustment, silver plated. Sizes available: 25, 55, 80, 105, 125 p.F.
7/6 each or Three for £1.

BC966A L.F.F. Top Deck CHASSIS

With Valves: six 6SH7GTs, three 7193s, two 6H6s. Octal Sockets, Resistors, Condensers, 15 x 15 pF. Split-stator Condenser, Relays and Osc. Unit. 30/-.

RELAYS

522 Type 5,000 ohms £1
522 Type, Aerial Changeover £1

DECEMBER — — — 1959

Vol. 27

No. 12

EDITOR:

R. W. HIGGINBOTHAM, VK3RN.

PUBLICATIONS COMMITTEE:

G. W. BATY, VK3AOM.
S. T. CLARK, VK3ASC.
J. C. DUNCAN, VK3JV.
J. A. ELTON, VK3ID.
R. S. FISHER, VK3OM.
E. C. MANIFOLD, VK3EM.
J. G. MARSLAND, VK3NY.
A. ROUDIE, VK3UJ.
J. VAILE, VK3PZ.

ADVERTISING REPRESENTATIVE:

BEATRICE TOUEAU,
96 Collins St., Melbourne, C.1.
Telephone: FM 4505.

PRINTERS:

"RICHMOND CHRONICLE,"
Shakespeare St., Richmond, E.1.
Telephone: JB 2419.

MSS. and Magazine Correspondence
should be forwarded to the Editor,
P.O. BOX 36,
EAST MELBOURNE, C.2, VIC.,
on or before the 8th of each month.

Subscription rate, in Australia and
Overseas, is 24/- per annum, in
advance (post paid).

Wireless Institute of Australia
(Victorian Division) Rooms' Phone
Number is JA 2535.

WI BROADCASTS

All Amateurs are urged to keep these
frequencies clear during, and for a period
of 15 minutes after, the official Broadcasts.

VK3WI: Sundays, 1100 hours EST, simultaneously on 3576 Mc., 7146 Mc., and 145.9 Mc. Intrastate call-backs taken on 7050 Mc.

VK3WT: Sundays, 1630 hours EST, simultaneously on 3576 Mc., 7146 Mc., 51.916 and 145.25 Mc. Intrastate hook-ups taken on 7135 Mc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI: Sundays, 0900 hours EST, simultaneously on 7146 Mc., 14.341 Mc. and 50.172 Mc. Intrastate hook-ups taken on 7105 Mc.

VK5WI: Sundays, 0800 hours CAT, on 7146 Mc. Intrastate hook-ups taken on 7125 Mc. Frequency checks given when VK5WI is on the air and also by VK5MD by arrangement.

VK6WI: Sundays at 1000 hours EST, on 7146 Mc. and 2672 Mc. Intrastate hook-ups taken on 7115 Mc.

VK7WI: Sundays at 1000 hours EST, on 7146 Mc. and 2672 Mc. Intrastate hook-ups taken on 7115 Mc.

AMATEUR RADIO

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

Published by the Wireless Institute of Australia, Victorian Division,
478 Victoria Parade, East Melbourne, C.2.
Postal Address: P.O. Box 36, East Melbourne, C.2, Vic.

EDITORIAL



Christmas Greetings To You All

On behalf of the Federal Executive and Federal Council of the Wireless Institute of Australia, I extend to all Amateurs, Short Wave Listeners and all those interested in Amateur Radio, hearty good wishes for the Christmas Season.

Unlike most countries, Christmas in Australia is a time of warm weather and gay, carefree holiday spirit spent in the open air; a break from the past year's work and problems when many Amateurs give their spare time to finishing off those projects which it wasn't possible to complete during all those working weeks now behind them; a holiday period before commencing a new year.

Whatever you may be doing, wherever you may be, I wish you a happy festive season from my colleagues and myself, and I trust you will find those spare hours off from your other activities to devote to your hobby of Amateur Radio.

1959 has witnessed the conclusion of a milestone in the history of Amateur Radio in Australia . . . the International Telecommunications Union Administrative Radio Conference in Geneva for which you, as Amateurs, subscribed your donation to send your own representative with the official Australian Delegation. The final outcome of this mammoth conference will not be known for

some time yet, although by the time this issue of "Amateur Radio" goes to press you will probably have had a final report from John Moyle, VK2JU, and in the new year you will have the opportunity of hearing him personally address you at your Divisional meeting. You will be advised of the date as soon as practicable and I would ask each and every one of you to set that date aside as a "must".

In the years ahead, we must all actively plan to use the bands we have allocated expressly for our use. If we don't we shall have a hard fight to retain them for the demand on frequencies in the ever widening sphere of communications and the jet age into which we are now moving is difficult to appreciate. But it is huge and a growing danger to our very existence and a matter to which we must on no account turn a deaf ear and a blind eye.

I also extend, on behalf of the Federal Council and Federal Executive, festive greetings to our advertisers, without whose support "Amateur Radio" could not be published. As our Institute membership grows, so will the Institute grow; and as the Institute grows, so, I trust, will the support of our advertisers.

A Very Happy Christmas to you all.

G. MAXWELL HULL,
Federal President, W.I.A.

THE CONTENTS

A Multiband Antenna System for the Newcomer	2	Ross Hull Memorial V.h.f. Contest 1959-60 Rules	18
A Simple Squelch Circuit	5	Amateur Station for Apprenticeship Week Exhibition	7
Electrical Shock: Fact and Fiction	6	VK4TC at Townsville Industries Fair	24
Break-In at Its Best	9	Transfer of P.M.G. Radio Branch Hq. Administration	11
Technical Correspondence: Gated Screen Modulator	11	Edward and His Beam	11
Technical Topics: Antenna for Field Day or Portable Operation	16	Prediction Chart for Dec. '59	20
An Economical Receiver for S.W. Listening	17	Correspondence	23
John Moyle Reports: A Conference of Compromise in Geneva, 1959	15	SWL	19
Rememberance Day Contest 1959 Results	12	VHF	21
Results of VK9 3.5 Mc. Contest	16	DX	22
Notes	25	Contest Calendar	25
Obituary	25	Contestants	25
Index to Volume 27—1959	27	Index	27

A Multiband Antenna System for the Newcomer

COMBINATION ANTENNA COUPLER AND MATCHING INDICATOR

LEWIS G. McCOY, WIICP

If you have been searching for a multiband antenna system, this article should be of considerable interest to you. We will describe an antenna coupler for the 3.5 through 28 Mc. bands that has a built-in standing-wave ratio bridge. The s.w.r. bridge can be used for matching and as an output indicator. Also included in the article is the description of a multiband antenna. Whether you are a newcomer or an old-hand, this may be exactly what you have been looking for.

You may have read or heard that an antenna coupler is an unnecessary item in the ham station. Before going any further let's see what a coupler is and what it can do for you.

WHY AN ANTENNA COUPLER?

Many newcomers to Amateur Radio elect to use antenna systems that do not require antenna couplers. Such systems as multiple dipoles, trap-type antennae, and the off-centre-fed type have become quite popular. The reason for the popularity of these systems is that they can normally be attached directly to the transmitter (with a feed line, of course), and be made to work. When an antenna system is used that requires a coupler, the coupler must be adjusted in order for the system to work. As the systems mentioned above do not require couplers, it can be said that they offer "operating convenience." However, to mix a metaphor, you cannot have your cake and get it for nothing! There are many excellent reasons why a coupler should be used and they far outweigh any operating conveniences of the non-coupler type installation.

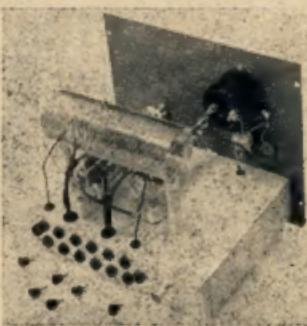
First, an antenna coupler usually eliminates the harmonic problem. We are speaking now of the common problem of second-harmonic radiation (7.4 Mc.) from 3.7 Mc. operation.

In many instances the use of a coupler will eliminate the harmonic t.v.i. problem. If sufficient harmonic attenuation is not achieved with the coupler, a low-pass filter must be used; here again a coupler plays a very important role.

A low-pass filter is designed for a particular impedance of coaxial line, usually 50 or 75 ohms. This line must be reasonably flat (have a low standing wave ratio), in order to prevent damage to the filter components. It is difficult to keep the s.w.r. low on feed lines used with the types of antennae mentioned earlier, at least on all the Amateur bands and frequencies. However, it is a very simple matter to take care of this problem when using a coupler. The normal procedure is to connect the transmitter to the coupler via a short length of coax line. By adjusting the coupler the coax line can be kept perfectly flat on any frequency within the Amateur bands. The ideal place to install the filter is in this length of line.

In many instances, it may become difficult or impossible to couple power from the transmitter to the antenna because the coupling circuit doesn't have enough range. This deficiency can be eliminated by the use of an antenna coupler. With the system described here it is possible to adjust the coupler so that the transmitter is always working into the best load for its coupling circuits.

The antenna system we will describe uses open-wire feeders and here is another advantage in using a coupler. Of all the types of lines used by Amateurs, open-wire feeders have by far the least loss. Also, many other types of lines can be affected by moisture so that their characteristics change. Open-wire feeders are not affected by moisture, at least not as much as some other lines.



Two stellite pillars are used to support the coil on the chassis. The bottom of the coil is high enough to clear the rotor of C3 when it is open. Sensitivity control R2 is mounted on the panel below MA1.

All too many Amateurs think of an antenna coupler only in terms of transmitting. By installing the antenna change-over relay or switch between the transmitter and coupler, the latter can be used on the receiver. If you don't think this can be a big help just ask any Amateur who uses such a set-up. The coupler provides, in many cases, additional selectivity for the receiver. Strong commercial signals outside the Ham bands have a nasty habit of getting into the receiver, causing image troubles or cross modulation. A coupler helps to reduce this problem.

Before getting into the actual construction of the coupler, let's take up one more point that the newcomer may not be familiar with—series or parallel tuned feed lines. The main purpose of a coupler is just what the name implies, to couple the power from the transmitter to the antenna feed line. The end of the feed line that is attached to the coupler presents a load to the

coupler. With a high s.w.r. whether this load is high or low impedance depends on the electrical length of the feed line and antenna. If it is low it is easy to couple power from the transmitter if a series-tuned circuit is used in the coupler. When the load is a high impedance, parallel tuning should be used. We'll show you how to design your antenna and tell you what type of tuning is required in a moment, but first let's take a look at the coupler.

THE ANTENNA COUPLER

At first glance, Fig. 1, the circuit of the antenna coupler, may appear complicated. However, don't be scared away; it is actually quite simple. The method of changing from series to parallel tuning while maintaining coupling at the centre of the antenna coil is a novel one cooked up by WIDX. As you will find when you read the section of the article on the antenna, the use of series or parallel tuning will depend on the antenna and feeder lengths.

In order to show how the coupler is used for series or parallel connections, we have drawn two simple circuits in Fig. 1, B and C. For series tuning, the feed line is attached to terminals 1 and 2. This splits the antenna coil into two equal parts and puts them in series with the line. When parallel tuning is required terminals 1 and 2 are shorted with a jumper and the feed line is connected to 13 and 14.

Band-changing the coupler is accomplished by shorting out portions of the coils L2 and L3. The taps and leads from the coil are wired to pin packs that can be connected together with shorting jumpers. Normally, the unused portion of the coil should be jumped with the shortest possible line. However, no ill effects were apparent in testing and using the coupler as shown. We had considered a switch for making the coil changes but a suitable switch, one that would fit the requirements of voltage breakdown and mechanical layout, was impossible to find—at least, at prices we were willing to pay. The pin jacks and plugs cost only a few cents each.

The coupler as described will easily handle the Novice 75-watt power limit. Any readers using transmitters in the popular 150-watt class can alter the coupler for this power level by using a variable capacitor with adequate voltage rating for C2. The coil stock used for L1, L2 and L3 should safely handle about 300 watts without overheating so the controlling factor is the r.f. voltage rating of C2.

The s.w.r. bridge utilises a length of RG-58/U to house the pickup wire of the bridge.¹ A double-pole switch is required to switch the pickup lead ends so that either forward or reflected power can be fed to the indicating circuit.

¹ Bunce, "The Mickey-Match," "QST," Nov. 1956; "A.R.C.," July 1956.

CONSTRUCTION

The unit shown here was built on a $2 \times 7 \times 9$ inch aluminum chassis which is housed in a cabinet. If the reader elects to use a bigger capacitor (greater plate spacing) for C2 a larger chassis than the one specified would be more suitable. Layout of the components is not critical but it is a good idea to use the photographs as a guide.

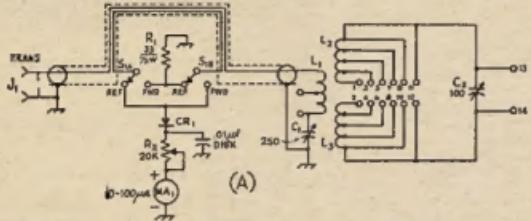


Fig. 1.—(A) Circuit diagram of the antenna coupler and s.w.r. bridge. (B) Series tuning. (C) Parallel tuning.
C1—250 pF. variable capacitor.
C2—100 pF. variable capacitor.
CR1—IN34A germanium diode.
J1—Coaxial chassis receptacle.
L1, L2, L3—See Fig. 2 and text.
MA1—100 microammeter.
R1—33 ohms .14 watt, carbon.
R2—20,000 ohm potentiometer.
S1—D.P.D.T. "tone control type" switch.

Fig. 2 is a drawing of the three coils —L1, L2 and L3. These three coils are all part of a single length of B. & W. 3907-1 coil stock. This material is 2 inches in diameter, 10 turns per inch, No. 16 tinned wire. Before attempting to make the coils for the coupler, study Fig. 2 so that you are completely familiar with the drawing. With a ruler measure off 68 turns (6-13/16 inches) and cut this piece from the original stock. A hacksaw is a good tool for cutting the stock support bars. Unwind one turn from each end of the piece.

This will leave a 68-turn coil. Count in from the end of the coil and cut the wire at the 26 $\frac{1}{2}$ turn. Do this at each side. We used a pair of side cutters to make the cuts and slightly bent the adjoining turns away from the cutting point in order to get at the wire. Unwind a half turn from these points and this will leave you with three separate coils, all on the same support bars. Refer to Fig. 2 for the tap points. You will find that if you bend the wires adjacent to the tap points in toward the axis of the coil you'll have plenty of room to solder the tap leads onto the coil.

The link, L1, is too large for 14, 21 and 28 Mc., so part of it must be shortened out when using these bands. Two soldering lugs should be soldered to the 1st and 6th turns of the link counting from the C1 end. The lugs are mounted at the top of the coil and bent so their ends are close together. An alligator clip can be used to short the two lugs. Use a copper clip as iron tends to heat up when used in r.f. power circuits. Incidentally, this is an important point to remember when doing any transmitter construction work involving r.f. circuits. Iron or steel will heat up and actually steal power from the circuits.

Use nonmagnetic hardware for mechanical connections wherever possible.

Two steatite standoff insulators, $\frac{1}{2}$ inch, are used to support the coils. Soldering lugs should be soldered to the first turn on each of the two outside coils. The lugs are then mounted on the standoffs (see Fig. 2).

Steatite standoffs, $\frac{1}{2}$ inch high should be used to mount C1 and C2 on the

material can be peeled off. A 14-inch length of No. 20 solid tinned wire, plastic insulation is used for the bridge pickup wire. Mark the braid on the coax 6 inches from one end and 4 inches from the other. Next, bunch the cable together and with a sharp pointed tool make a small opening in the braid at the marked points. Feed the pickup wire under the braid, in one opening and out the other. Stretch the braid out along the cable until about one inch of the pickup wire projects from each opening. Look at the bottom view of the coupler and you will see how the coax is coiled up so that the two pickup wire ends are close to switch contacts. Once we found the correct configuration, a short length of tinned wire was wrapped around the braid and soldered. This holds the assembly in place and makes it easier to handle.

The terminating resistor of the bridge, (R7) is a half-watt carbon 33-ohm unit. Be sure to use a carbon resistor, not wire-wound. A rubber grommet should be installed in the chassis top directly over the switch. This opening is for the lead from the IN34A diode that goes to R2. When soldering the diode leads hold the wire with a pair of long-nose pliers between the body of the diode and the point being soldered. This will conduct the heat away from the diode, thereby preventing damage to the unit. The sensitivity control, R2, should be mounted below the meter.

THE ANTENNA SYSTEM

Before discussing adjustment procedures let's take a look at the antenna system. There are a few simple rules that should be followed (if possible) when installing an antenna. Try and get the antenna as high as possible. Also, keep it clear of nearby objects. In other words, don't run it alongside rain gutters or through branches. Dress the feed line away from the antenna at right angles, or as near so as possible. Many Amateurs bring their feed line straight down from the antenna to a post or support and then into the shack.

However, if you cannot follow the above rules, it doesn't mean an antenna won't work. For example, if you are cramped for space you can drop the ends of the antenna down in order to increase the length. If the antenna must run near metal objects don't scrap your plans. Put the antenna up and try it; you may be pleasantly surprised.

How long should the antenna be? The answer to this question depends primarily on the lowest frequency band

CUT WIRE HERE AND UNWIND
ONE HALF TURN
SOLDER LUGS

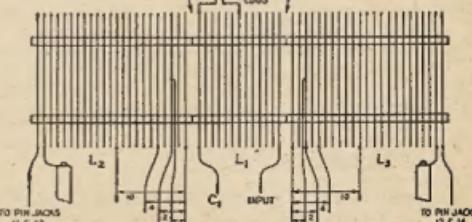


Fig. 2—Drawing of the antenna and link coils, L1, L2 and L3. The numbers indicate the terminals to which the coil taps and leads are connected.

NEW Audio Amplifier Manual



15 COMPLETE CHAPTERS (including)

- Amplifying Systems
- Sources of Distortion in Recorded Sound
- High-quality Amplification
- General Notes on Construction and Assembly
- Twenty-watt Amplifier
- Ten-watt Amplifier
- Three-watt Amplifier
- Two- and Three-valve Pre-amplifiers
- Input-mixing Pre-amplifiers
- Three-watt Tape Amplifier
- Tape Pre-amplifier
- Seven-watt Stereophonic Amplifier
- Three-valve Stereophonic Amplifier
- Stereophonic Pre-amplifier



With the growing demand for high quality sound reproduction, more and more of the circuits in use today require specialised knowledge. This new publication fully describes the wide range of high-quality audio amplifier circuits designed by engineers of the Mullard Developmental Laboratories in the United Kingdom.

Four introductory chapters give a full technical explanation of monaural and stereophonic sound reproduction. The rest of the book comprises circuit descriptions, constructional details and performance figures of twelve Mullard circuits. These circuits include well-known Mullard designs, some modifications and improvements to these designs and a number of completely new designs.

MULLARD-AUSTRALIA PTY. LTD. Box 2118 G.P.O. SYDNEY

Please send me _____ copies of "Circuits for Audio Amplifiers"
for which I enclose _____ remittance, being 12/-, plus 1/- postage per copy.

NAME _____

ADDRESS _____

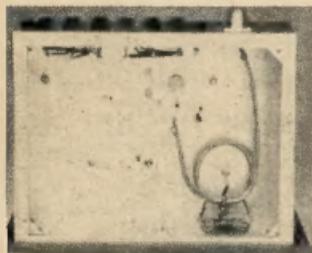
STATE _____

MULLARD-AUSTRALIA PTY. LTD., 35-43 CLARENCE ST., SYDNEY, NSW 2006 & 123-129 VICTORIA PDE., COLLINGWOOD, N.S. VIC. 3166
ASSOCIATED WITH MULLARD LIMITED, LONDON, MULLARD EQUIPMENT LIMITED AND MULLARD OVERSEAS LIMITED
M191a

you plan on using and, of course, how much space is available. We will assume that you want the antenna for 3.5 Mc. as the lowest band. If it is long enough for this band it will be adequate for the higher bands.

Fig. 3 gives the information you'll need to find the antenna and feeder lengths. The length of the antenna, A, should be at least a quarter wavelength long at the lowest frequency band. Otherwise, the effectiveness of the antenna will suffer. When you make the system according to the formula $(A + 2) + B$ equals a quarter wavelength, or multiple thereof, you will simplify the coupling problems. For an odd number of quarter wavelengths you will use series tuning at the coupler, and for an even number, parallel tuning.

A common problem is finding enough space for the antenna, the average city lot being too small for a half-wavelength antenna on 3.5 Mc. As mentioned earlier, the antenna can be shorter than a half wave and still work. The feed line can be lengthened or shortened to make the system fit the formula.



This view shows the method for connecting the coax input line and pickup wire. The terminal jacks for the coil leads and taps are mounted along the rear chassis wall.

You can make your own open-wire feeders or use the t.v.-type open-wire line. Don't use solid-dielectric twin-lead for the feeders; this type of line is satisfactory for some types of feeders but not in tuned lines. You can use a short run of the transmitting type twin-lead to go from the coupler to the feed-through insulators on the wall of the shack. The insulated twin-lead will simplify your installation problems, but don't use any more than you have to. For the antenna, you can use No. 14 Copperweld or a similar type. (Electric fence wire makes good antenna material.) Use soft-drawn wire in a home-made feed line.

GETTING THE SYSTEM WORKING

Connect the coupler to the transmitter with a length of 52-ohm coax, either RG-58/U or RG-8/U. If you are using a low-pass filter it should be installed in this length of line. Also, the antenna relay should be inserted at this point. Attach the feed line to the coupler and make the connections for series or parallel as required. (See Table 1.) Set R2 in the indicator circuit at maximum resistance and switch S1 to re-

flected power. Tune up the transmitter and resonate the final amplifier for plate meter dip. If you have an output drive control it is a good idea to tune up with reduced output. Next, adjust C1 and C2 in the coupler for minimum reading on the s.w.r. indicator. You will probably have to decrease the resistance of the potentiometer, R2, in order to get a reading. When C1 and C2 are adjusted for minimum reading (this is usually zero or close to it), switch S1 for forward power and set R2 for about half-scale meter reading. Now you can tune up the transmitter for full loading as indicated by your plate meter and the bridge meter. You may have to reduce the setting of R2 to keep the needle on scale. Incidentally, once your coupler is adjusted for the minimum reading or matched condition you don't have to change the coupler adjustments for that particular frequency. All loading adjustments are made at the transmitter.

TUNING INFORMATION	
Parallel	Series
Connect feeders to 13 and 14,	Connect feeders to 1 and 2.
jumper to 1 and 2.	
Short the following terminals with jumpers:	
3.5 Mc.	—
7.0 Mc.	11 and 9 — 12 and 10
14.0 Mc.	11 and 7 — 12 and 8
21.0 Mc.	11 and 5 — 12 and 6
28.0 Mc.	11 and 3 — 12 and 4

Table 1.

Mark down the control settings of the coupler for this particular frequency and then proceed to the next higher band. Keep a record of the settings and it will be a simple matter to set the coupler up in a hurry.

If you should find that you cannot get a matched condition on some band, you may have to try different tap points. However, be sure to try both series and parallel tuning first.

If you are looking for additional information on antenna masts, how to support the antenna, construction of feed lines, and so forth, we suggest you study "The Radio Amateur's Handbook" and "The ARRL Antenna Book."

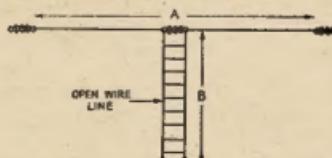


Fig. 3.—The length A should be more than a quarter wavelength at the lowest operating frequency. When you determine the length of A to half the distance, add a sufficient length of feed line (B) to make up a quarter wavelength or multiple thereof. For example, let's assume you can put up an antenna 80 feet long and you want to have a 3.75 Mc. band as the lowest frequency. From the formula:

$$\frac{246}{3.7} \text{ equals } 66.5 \text{ ft.}$$

$$66.5 \text{ minus } 40 \text{ equals } 26.5 \text{ ft.}$$

the feeder length, or

$$2 \text{ multiplied by } 66.5 \text{ equals } 133$$

$$133 \text{ minus } 40 \text{ equals } 93 \text{ ft.}$$

This can be carried out for greater feeder lengths, depending on the requirements of the installation.

A SIMPLE SQUELCH CIRCUIT

V. KERR,* VKALK

A QUICK glance at the accompanying circuit diagram will soon recognise the "evergreen" clamp tube, so popular with pentode class C transmitter stages. For those who wish to try a squelch circuit in the output of an existing receiver, and not wishing to go to the complication of some squelch circuits, this particular layout will be the answer.

It has good sensitivity and works without complication. No claim is made for the originality of the idea, having been used in commercial equipment for many years. For the most satisfactory result a pentode first audio in your receiver is necessary, although it is possible to use the plate circuit of a triode first audio in a like manner with passable results.

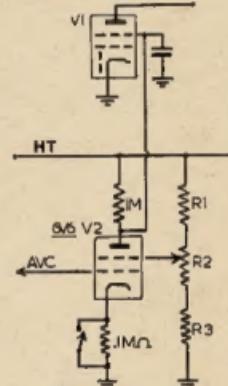


Fig. 1.—Squelch Circuit.

The use of a GMS, 6AG7 or other similar tubes may be better as better as bias requirements and lower a.v.c. will cause squelch to open with a weaker signal.
 V1—Pentode 2nd detector.
 V2—5V6, 6AQ5, etc.
 R1—Two 47K ohm 1 watt resistors paralleled.
 R2—10K ohm 1 watt wire wound pot.
 R3—Two 1K ohm 1 watt resistors paralleled.

The only adjustments necessary to set the squelch in operation after having wired it into the circuit, are to close the switch, shorting out or grounding the cathode circuit of the 5V6 (6AQ5, etc.) and adjust the 10,000 ohm potentiometer until the output of the receiver cuts off without any signal being received, that is, anything passing through the receiver from the front-end to generate an a.v.c. voltage.

As soon as a signal is tuned, a.v.c. voltage generated, the bias generated on the grid of the 5V6 will allow normal voltage on the screen of the second detector, with the audio output of the receiver as usual.

Opening the switch in the cathode circuit of the 5V6 will render the squelch inoperative, allowing normal audio stage function.

* Dalrymple Road, Charters Towers, Qld.

ELECTRICAL SHOCK: FACT AND FICTION*

BY DANIEL P. PETERS

DO YOU BELIEVE THAT . . .

Electricity kills by burning its victims to death?

Small currents are less harmful than large ones?

Low voltages are not lethal?

There are no harmful after-effects if you survive?

If so, here is the shocking truth!

ANY man on the street can probably supply you with the information that an electrical shock can be lethal. However, surprisingly few people actually know how or why. For those who work in the presence of voltages and currents that may be harmful, ignorance of the true nature of shock is dangerous. Knowing what actually happens is the first step toward taking the proper precautions and, in the case of electrical shock, there are all too many misconceptions. For example:

FICTION: Electricity kills by burning its victims to death or "shorting" them out.

FACT: Medical records prove that electrical currents great enough to cause actual burning kill less often than do currents of much lower magnitude. The notion that an electrical current "shorts out" its victim in the way that lightning can short out an electrical circuit, while closer to the truth than the "burn" theory, is still misleading. Actually, electricity kills by overriding the control that the nervous system exercises over the body.

The human body has sometimes been compared to an automatic factory. Muscles are its motors. Master-minding the operation of these motors is that fabulously complicated calculator—the brain. This message centre sends instructions to the controlled parts of the body via an intricate electrochemical network we know as the nervous system. Doctors take advantage of the electrical nature of the nervous system with electrocardiographic and electroencephalographic equipment, which measure the small impulses associated with heart and brain, respectively.

If overridden by an outside current, the electrical impulses of the nervous system lose control of body functions. During brain surgery, for example, doctors have applied small potentials to various sections of the brain that have caused movements of limbs and induced mental images. Through such electrical prodding, much is being learned about the mysteries of the mind.

Not so helpful, however, are the uncontrolled currents that flow during electrical shock—currents that swamp out the signals going to various parts of the body. Particularly dangerous are such currents that enter the heart and respiratory centres. Thus, a key factor in death by electrical shock is

the path of the undesired current within the human body, as well as its magnitude.

Death following shock is generally caused by one of two direct effects: ventricular fibrillation or respiratory-centre paralysis.

To understand ventricular fibrillation, we should know a little about how the heart operates. Basically, it is a pump forcing blood through the body. Controlling the heart muscles is a minute, electric current occurring periodically in the right auricle of that organ. If the conduction system of the heart is disturbed, say by an outside electric current, the muscles respond in a haphazard fashion, rendering the organ useless as a pump. Known as centripetal fibrillation, this phenomenon generally causes death since the vital body organs are not supplied with fresh blood.

Respiratory-centre paralysis is the second most lethal effect of electrical shock. Normal breathing is controlled by a stimulus from a section of the hindbrain known as the medulla oblongata. The electrical stimulus travels through a complex nerve network to the breathing muscles and lungs. An outside current can easily paralyse the network and cause breathing to stop. Actually death from shock can be caused by respiratory-centre paralysis, by ventricular fibrillation, or by both.

FICTION: Small currents are less harmful than large ones.

FACT: For obvious reasons, the exact intensity of current that will cause death in a human being is not easy to determine. However, much research has been conducted in this direction. One careful study in this area was undertaken by researcher L. Alexander and published by medical organizations on the American continent about two decades ago. Table 1 presents key information extracted from his report. There are other complications showing somewhat different tabulations—such factors as whether males or females are involved, whether the current is a.c. or d.c., and the methods used in research may affect the data—but the table will serve as an illustrative guide.

Current in Amperes	Effect
0.0002-0.0003	Tap.
0.00075	Pinch.
0.001	Grip.
0.005-0.015	Unpleasant stimulation.
0.015-0.019	Paralysis of muscles through which current flows.
0.025	Possible permanent damage to tissues and blood vessels.
0.07 and higher	May be lethal.

Table 1.—Shock current intensities and their effects.

Currents of 0.07 to 0.09 ampere generally cause death by ventricular fibrillation, if they pass through the chest. However, much lower currents can also prove fatal. A current of only 0.015 ampere passing directly through the chest can render the victim incapable of releasing himself from the circuit, while simultaneously paralysing the muscles of the diaphragm needed in breathing. Unless he is released from the circuit with outside help, he will die from asphyxia even though the heart and respiratory centres are not affected directly.

From the chart we can also see why people say that a charged conductor "holds" its victim. Once muscle paralysis occurs, he can do nothing to free himself. However, in some cases, muscles contract with enough violence to "throw" the victim. This, of course, may cause secondary injuries if he hits something in his flight, but also may be the means of saving his life. A larger current would be more likely to do this than a smaller one. More will be said on this score later.

FICTION: Low voltages are not lethal.

FACT: Thus far we have considered only the effects of a current passing through the body. However, voltage is the force that determines current magnitude. The amount of current for a given applied voltage, of course, depends on resistance—and the resistance of the human body varies widely. It depends, among other things, upon the path of current; the health of the individual; the duration of the current flow; the condition of the skin (wet, dry, etc.); and the area of contact. Measure the resistance of your body from arm-to-arm under various conditions; you will find that, while perspiring freely on a warm day, the resistance is so low that 25 volts could produce sufficient current to cause death. Confirming this, there are cases on record of deaths caused by 32-volt farm lighting systems. Yet, under more favourable conditions, the 120-volt house lighting system would cause only a tingle!

FICTION: High voltages are always more dangerous than low ones.

FACT: Strangely enough, shock from potentials greater than 1,000 volts may be less dangerous than those from lower voltages. The reason for this is that the high currents associated with high voltages may cause all muscles—including those of the heart—to contract suddenly and violently. The heart muscles may contract to such an extent that fibrillation cannot occur. In such cases, the heart may resume normal action if the victim is released in three or four minutes. A recovery rate of 62% among cases where persons were knocked out by potentials above 1,000 volts was observed during a study made in 1933. The corresponding rate at much lower voltages was only 39%. (Continued on Page 7)

AMATEUR STATION FOR APPRENTICESHIP WEEK EXHIBITION



During Apprenticeship Week, September, 1959, the Grafton Group of the N.S.W. Division of the W.I.A. conducted a Radio Exhibition and operated a station using the Division's call sign, VK2AWL, at the Grafton Technical College. The photograph shows the Grafton Amateurs, left to right: seated, Geoff, VK2SR; Roy, VK2NY; Terry, VK2JS; Peter, VK2TB, and Bill, VK2OE.

ELECTRICAL SHOCK: FACT AND FICTION

(Continued from Page 6)

Not only the voltage and current magnitudes but also the current body paths are important. Any route involving the heart or brain is dangerous, as pointed out earlier. The "Journal of Industrial Hygiene" reported in 1925 that, of a number of cases involving fatal shock at voltages below 250, 90% of the victims had marks on their left hands. This indicates that shocks through the left hand—hence, nearer the left side and heart—are much more dangerous than those through the right hand. Thus, if you tend to keep one hand in your pocket while near live circuits, make it the left.

FICTION: There are no harmful after-effects if you survive a shock.

FACT: If you suffer a shock and have sustained no apparent injury, it may not mean that your troubles are over. Electrical shock *sometimes* damages nerve tissue. This may cause a wasting away of muscle—a slow, progressive disturbance that may not become evident for weeks or even months. Other delayed effects may produce personality changes, amnesia, mental inertia, blood-vessel diseases, cataracts, destruction of the pancreatic tissues, and heart conditions.

So much for the effects of electric shock. What should be done if you see someone rendered unconscious by electricity?

Every person who works near electrical equipment should acquaint himself with rescue techniques.

The first step is to break the connection between the victim and the power source. If possible, do this by turning off the power. The next best thing is to remove the victim from the voltage source—without endangering yourself. Use a wood board or other non-conducting object. As soon as you can touch the victim safely, apply artificial respiration.

Speed is essential. Any delay at all greatly reduces the chances of recovery. Of some 600 cases studied, over 70% of those receiving artificial respiration within three minutes recovered. Just one more minute of delay dropped the figure to 58%. If there is no heart or respiratory action and treatment is delayed five minutes, death is virtually certain.

If you are alone, do not take time to go for help. Start artificial respiration immediately. If the person can be saved, you can do it as well as anyone. And don't stop even if the victim appears dead. Eight hours have elapsed, in some cases, before the victim responded. The only sure sign of death is *rigor mortis*—and only a physician should judge whether that condition exists.

Above all, don't let the victim be you!

CHOOSE THE BEST—IT COSTS NO MORE



O. T. LEMPRIERE & CO. LIMITED
Head Office: 27-41 Bowden Street, Alexandria, N.S.W.
and at Melbourne • Brisbane • Adelaide • Perth

Duralumin Aluminium Alloy Tubing for Radio Aerials

★ LIGHT ★ STRONG ★ NON-CORROSIVE

STOCKS NOW AVAILABLE FOR IMMEDIATE DELIVERY

ALL DIAMETERS $\frac{1}{4}$ " TO 3"

RECOMMENDED FOR TELEVISION AND BEAM AERIALS

Price List on Request

STOCKISTS OF SHEETS—ALL SIZES AND GAUGES

GUNNERSEN ALLEN METALS

PTY. LTD.

88-92 YARRA BANK ROAD, SOUTH MELBOURNE

Phone: MX 2121 (10 lines)

Telegrams: "Metals," Melbourne.



WARBURTON FRANKI Page

SPECIALS!

Lapel type Crystal Mikes. 38/- ea.
Turnover Crystal Pick-ups. 59/6 ea.
Pack & Post 2/6 ea.

Imported Recording Tape
First quality plastic.
3 in. Spool 200 ft. Tape 10/6

5 in. " 900 ft. " 29/6 Pack & Post
7 in. " 1800 ft. " 49/6 2/6 ea.

Power Transformers: 100 mA. 385 v.
aside, 6.3v., 6.3v., 9v. 36/6. Pack & Post 4/6.

Microphones: Imported Gramophone Model
DPL. Grid Impedance of 200 ohms. 19 Gns.
each. Pack & Post 4/6.

Amplifiers: Imported Gramophone-Mullard
5-10 Amplifier only - 35 Gns.
No. 54 Control Unit - 13 Gns. Freight
No. 56 Pre-Amp. Unit - 19 Gns. Forward.

NEW—The TAYLOR Model I27A Multimeter

. . . Pocket-sized, with sensitivity of 20,000 o.p.v.

The model I27A is the first pocket-size Multimeter in this country with a sensitivity of 20,000 o.p.v. It is compact, inexpensive, and has sensitivity and accuracy characteristics normally associated with higher priced equipment. The instrument is designed to be used in the workshop, laboratory, bench, and in the world of Radio and T.V. Trade, Industry as well as for the Student and Amateur. It utilises the new rugged Taylor Moving Coil Centre Pole Meter and is specially ranged to give maximum reading accuracy for Radio and T.V. Servicing and Maintenance of Electrical Equipment. A large, easy to read, scale with a $\frac{3}{4}$ inch arc is fitted. The instrument is extremely robust in construction, and readily portable. Its main advantage lies in the high sensitivity and the ability to measure resistance up to 20 megohms with self-contained batteries.

SENSITIVITY: 20,000 o.p.v. D.C., 1,000 o.p.v. A.C.

RANGES:

Current Ranges: 50 μ A., 1 mA., 10 mA., 100 mA., and 1 Amp.

Volts D.C.: 0.3, 2.5, 10, 25, 100, 250, and 1000 v. (25 kv. by means of external adaptor, Model 43T.)

Volts A.C.: 10, 25, 100, 250, 1000 v.

Resistance: 0-2000 ohms (20 ohms centre scale), 0-200K (2000 ohms centre scale), 0-20 mega (200,000 ohms centre scale), self-contained.

Price: £19/6/6 plus 12½% S.T. **Model 427 E.H.T. Probe** £11/12/0 plus 12½% S.T.

EASY TERMS AVAILABLE IN VICTORIA for both the I27A and E.H.T. Probe.

DEPOSIT £6/10/0 and 12 monthly payments of 49/-.

HEATHKITS

WORLD'S MOST POPULAR DO-IT-YOURSELF KITS
SAVE YOU ONE-HALF OR MORE . . .

HEATHKIT 5 INCH OSCILLOSCOPE TYPE 0-12

VERTICAL CHANNEL

Sensitivity: 0.025 volt (R.M.S.) per inch at 1 kc.
Frequency Response: Flat within plus or minus 1 dB
from 0.2 to 2.5 mc. Flat within plus or minus 3 dB
from 1.5 to 5 mc. Response at 3.56 mc.
minus 2.2 dB. (All response measurements refer-
red to 1 kc.)

Rise Time: 0.05 microseconds or less.

Overshoot: 10% or less.

HORIZONTAL CHANNEL

Sensitivity: 0.3 volts (R.M.S.) per inch at 1 kc.
Frequency Response: Flat within plus or minus 1 dB
from 1 c.p.s. to 200 kc. Flat within plus or minus 3 dB
from 1 c.p.s. to 400 kc.

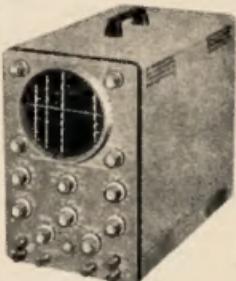
Attenuator: Low impedance type in cathode follower
output.

Input Characteristics: Selector switch permits use of
external input through panel terminal, line-
frequency sweep of variable phase or internal
sweep from sweep generator.

Horizontal Positioning: D.C. type; permits wide range
of positioning to examine any part of trace even
with full horizontal gain.

PRICE: £62/10/0 plus 12½% Sales Tax.

Deposit £17. £5 monthly for 12 months. Freight forward. Shipping weight 21 lbs.



HEATHKIT V-7A VTVM KIT

Specifications: D.C. Volts: 7 ranges 0.15
to 0-1500. Input resistance: 11 meg-
ohms. Sensitivity: 7,333,333 ohms per
volt on 1.5v. range. Accuracy \pm 3%
full scale. A.C. Volts: 7 R.M.S. ranges
0-1.5 to 0-1500. Frequency response (5v.
range): \pm 1 db, 42 c.p.s. to 7.2 mc.
Accuracy \pm 5% full scale. 7 peak-to-
peak ranges 0-4 to 0-4000. Resistance:
7 ranges measures
0.1 ohm to 1000
megohms with
internal battery. Size:
7 $\frac{3}{8}$ " x 4-11/16" x
4 $\frac{1}{8}$ ". Weight 7 lb.

PRICE: £27/10/0

plus 12½% S.T.

Post: Vic. 3/9,

Interstate 8/4.

Easy Terms:

£6/18/9 deposit &

45/- monthly for
12 months.



WORLD FAMOUS INTERNATIONAL RECTIFIERS

W.F. are Australian Representatives for American International Rectifiers.
Any Selenium type made to order.

WRITE, PHONE or CALL for complete information.

INTERNATIONAL 12v. 6a. Battery Charging Rectifier. Single Phase Bridge type. 65/- ea. Pack & Post 2/6.



WARBURTON FRANKI
359 LONSDALE ST., MELBOURNE — MU 8351



OPEN SAT. MORNINGS

*

TRADE ALSO SUPPLIED

Please include postage or freight with all orders

Break-In at Its Best

AUTOMATIC CHANGE-OVER AND RECEIVER MUTING

RALPH ROSENBAUM, W5ECP

NO BETTER endurance and practicability tests can be given to a piece of electronic equipment than during Field Day. On Field Day different operators will often find electrical faults in equipment, faults which go unnoticed by the owners. Sometimes, unfortunately, these defects are not discovered until the equipment breaks down under field conditions.

For example, I remember the disaster which occurred during the last two operating hours of the 1958 Field Day Contest. The Field Day operators at W5EKW were working over forty stations per hour until, to their horror, they saw a small cloud of smoke rise from my de luxe break-in system and fill the operating tent with the pungent odor of a burnt carbon resistor. The receivers immediately went dead, and it was obvious that the tr. switch in my break-in system had failed.



The complete t.r. monitoring unit is built on a $7 \times 13 \times 1$ inch aluminum chassis. The plug-in turret-socket units are a convenience in assembly. The left-hand unit at the top left contains the 6BZ7 and associated components. The 8C4 audio oscillator unit is next to the right, while the one at the centre houses the 12AX7 mixer/amplifier. The shielded tube to the right is the 8AQ5 output tube.

Nevertheless, there existed a very good reason why the failure had taken place. The break-in system had to be keyed both on c.w. and phone if the muting and t.r. switching units were to function properly. This caused the failure since, during rapid band changes to phone operation, the operators would forget to key the break-in system. The disastrous result was that the tr. tube and its components had burned out. In addition to this main electrical weakness, I received several complaints that the break-in relay used to key the transmitter was unable to follow the high speeds of the bug.

After Field Day I was so disappointed with my break-in system that I decided to make a different approach to the keying problem. In contrast to the custom of keying a transmitter by a break-in system, I decided that the r.f. power output from the transmitter must be the triggering agent for the

* Reprinted from "QST," September, 1959.

In the break-in system described here, W5ECP combines the features of earlier individual units in a single package. No alterations in transmitter or receiver are required.

break-in system. Keying the transmitter directly would eliminate the keying relay problem, and using r.f. energy as the triggering agent would enable the new system to function automatically on c.w., phone, and s.s.b.

T.R. SWITCH

The break-in system is composed of two sections—the t.r. switch (Fig. 1A) and the audio-muting and keying-monitor circuits (Fig. 1B). The latter circuits include an audio-muting switch, a side-tone generator for c.w. monitoring, and an audio amplifier to drive a speaker.

Although I had a choice of several t.r. switching circuits, I selected W3LYP's arrangement¹ for several reasons. First, he had tested the switch with a kw. of s.a.b. power. This would tend to indicate that a higher s.w.r. could be tolerated at lower power levels. A t.r. switch for Field Day use should meet this requirement since the

¹ Aronov, "An Electronic Transmitter-Receiver Antenna Switch," "QST," October, 1957.

s.w.r. on the feed lines is often very high. The gain offered by his circuit meant that my present preamplifier could be discarded. Last, W3LYP's circuit works automatically when r.f. is applied to its input.

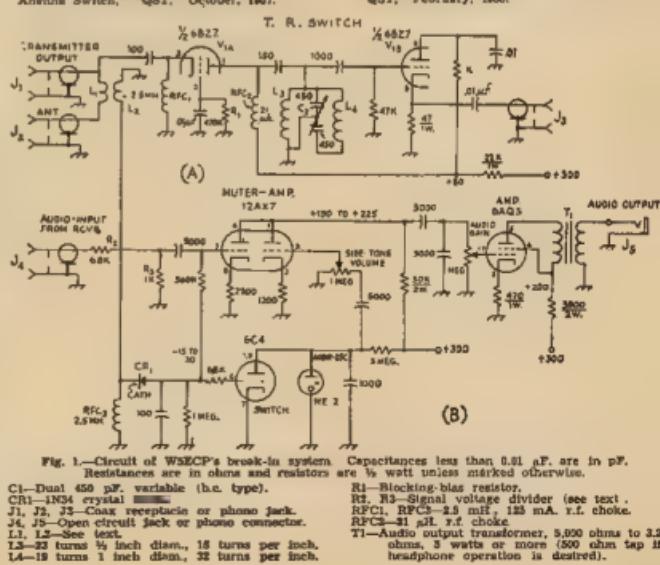
In W3LYP's circuit (Fig. 1A), one triode section of a 6BZ7 is used as a grounded-grid amplifier coupled to the transmitting antenna. The second triode section is used as a cathode follower feeding the receiver. The two stages are coupled using a multiband tuner, C2L3L4, which covers 10 through 80 metres without switching. The tuning is set once for each band. Normal bias for V1A is provided by the d.c. drop across the resistance of RFC1. When the transmitter is keyed, a high bias is developed across the grid leak R1, cutting the stage off almost completely. A few months ago W8EUJ came out with a t.r. switch which would make an ideal substitute for the builder who would like to eliminate W3LYP's grid tank circuit.

MUTER AND MONITOR

The audio portion (Fig. 1B) in this system is a modification of W6ICB's "Monoclipper."² Although this circuit has many fine qualities, I found that the clipper circuit he employed was an inconvenience. Since many of the

² Quick, "T.R. Switches," Hints and Kinks, "QST," September, 1958.

³ Lafferty, "The Monoclipper," Hints and Kinks, "QST," February, 1958.



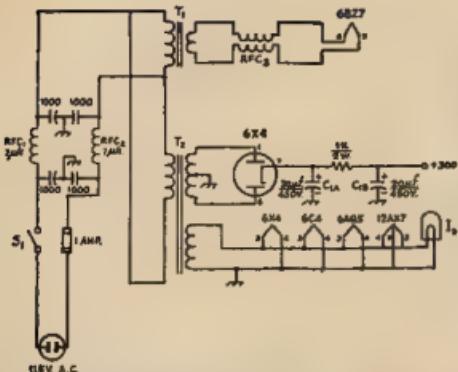


Fig. 2. Circuit of the power supply section of the transmitter system of Fig. 1. Unless otherwise indicated, capacitances are in pF. Capacitors marked with polarity are electrolytic. Resistance is in ohms.

C1 Dual 20/20 pF, 450 volt electrolytic.

II—6.3 volt panel lamp.

RFC1, RFC2—7 a.f. r.f. choke.

RFC3—See text.

SI—S.p.t. switch attached

to the 6BZ7 64Q5 audio gain control.

T1—6.3 volt, 1 amp. filament transformer.

T2—Power transformer, 750 watts r.m.s. c.t., 70 mA. with 6.3V. 3A. winding.

led from unity to three db on the different bands.

I found that a $12 \times 7 \times 3$ inch chassis gave ample room to mount all parts. Since the potentiometer provides the necessary attenuation of the side tone during phone and s.s.b. operations, I did not include a switch in the 8C4 circuit.

Fig. 2 shows the circuit diagram of the power supply section. The heater of the 6BZ7 should be isolated from ground so it is fed through a bifilar choke, RFC3, from a separate 6.3 volt transformer. RFC3 is made by winding two strands of No. 26 enamelled wire simultaneously on a $\frac{1}{4}$ inch diameter form to a length of $1\frac{1}{2}$ inches.

TESTING AND TUNING

The output power from the transmitter and the s.w.r. on the antenna feedline will determine the negative triggering bias for the audio circuit. Since r.f. coupling yielding more than 80 volts will damage the 1N34 diode, the amount of coupling from the inner coax wire should be carefully adjusted to obtain between -15 and -20 volts.

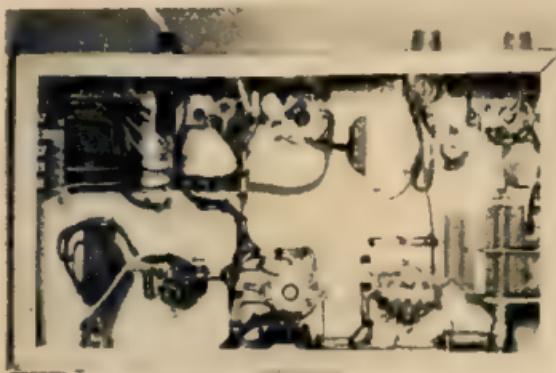
The first step in adjusting for proper negative voltage is to couple the transmitter at some point in the antenna feed system where the s.w.r. is less than 5 to 1. If an antenna coupler is employed, the unit should be placed between the coupler and the transmitter.

When the power output from the transmitter is between 50 and 100 watts, the bus wire joining the two female

components are easily accessible. The sockets not only look neat on a chassis, but also make wiring and lacing under the chassis very easy. I would suggest that the builder use either these plug-in-turret sockets or standard turret sockets in the construction of this system.

Although any construction practices may be followed, I suggest that the builder observe the following:

(1) The tr. switch circuit should be isolated from the other unit, and its components should be placed as close



In this under-chassis view, the power transformer and speaker output transformer are at the left, and the separate filament transformer for the 6BZ7 and the multi-band tuner are at the right. The monitor pick-up, L1, L2, is at the coax connector nearest to the filament transformer.

to the antenna coax connectors as possible. Also, the lead from the coupling coil L2 to the input of the 1N34 diode should be short.

(2) Another ground wire should be run from the grid tank circuit of the tr. switch to a common ground connection in the 6BZ7 circuit.

(3) The leads connecting the tank-circuit components should be kept short, and the tank-circuit coils should be placed in the open.

(4) Low voltage should be maintained on the plates of the 6BZ7 to prevent high frequency oscillations. Gains var-

antenna coax connectors should have a three-turn coil L1 at its centre. The diameter of the coil should be less than $\frac{1}{4}$ inch. The bias coupling coil, L2, fits over L1. The diameter of L2, which consists of twelve turns, should be large enough to allow a clearance of $\frac{1}{4}$ inch between the two coils. Both coils are wound with No. 16 wire. The coils are then soldered in place along with the 100 PF. capacitor.

If the negative bias is too high, the builder should lift the end of L2 from ground. There should be a drop of about 5 volts. With power outputs be-

CONSTRUCTION

I used plug-in-turret sockets. Although the cost is high, the sockets are certainly worth the money when experimental work is being done. Repair time is kept to a minimum since all

tween 100 and 500 volts, L1 should be eliminated and a straight wire should join the two female connectors. The proper number of turns on L2 should be determined experimentally.

With power outputs greater than 500 watts, a straight wire supported on the stand-off insulators and running parallel to the first wire will probably pick up sufficient r.f. energy.

Remember that if the s.w.r. on the line to which the unit is coupled has not been previously checked, the tuning socket housing the 1N34 should be pulled from its octal socket to prevent damage to the diode.

Where the unit may be used in Field Day installations, or frequently changed from one antenna system to another, it might be a good idea to shunt RFC3 with a variable resistor (pot.) which should first be turned so as to short out the choke, and then gradually advanced until the signal input to the 1N34 is just enough to trigger the muter and side-tone generator. A more expensive diode with a higher inverse voltage rating would be another solution.

I sincerely hope that the builder will have as many enjoyable hours of operating with this system as I have had!



Interior views of the three plug-in assemblies. Left to right, they are for the modulator, tr. switch and the muter/amplifier.

Technical Correspondence

GATED SCREEN MODULATOR

Editor "A.R." Dear Sir,

Having been interested in "cheap" methods of modulation for some years, I noted with special interest the article in "A.R." Jan. 1956 by VK2AYB and made a mental note to "have a go at it sometime." However, I did not get round to it.

About a month ago I mentioned the matter to another VK8 who was having trouble with his grid modulation. Later I sent him the circuit and when he experienced some bother, I made one up to find out why he was having trouble. It quickly became evident that the trouble he was having was not the fault of the "Gated Screen".

I have since had numerous QSO's during which I have changed from the generally used plate and screen modulation, using 807's in AB2, to the "Gated Screen" modulator which is almost identical to the published circuit. On very few occasions has the party at the other end been able to notice the difference. When they have been informed of the change and given another comparison, some of them have commented, "Well, perhaps the 'Gated Screen' does not sound as full-bodied" — and normally I modulate fairly heavily.

I would recommend to all those having bother with control, or screen grid modulation, and to those desiring—for any reason—a "cheap" modulator, to read again the above mentioned article and "give it a go"; I feel sure they will not be disappointed, thanks are due to VK2AYB.

L. G. Wilson, VK6LG.

TRANSFER OF P.M.G. RADIO BRANCH HQ. ADMINISTRATION

Members are asked to note that as from Monday, 2nd November, 1959, the offices of the Radio Branch, Headquarters Administration, are now located on the First Floor, Electrolytic Zinc Building, 390 Lonsdale Street, Melbourne, C.I. (On the northern side of Lonsdale Street on the corner of Hardware St., about midway between Queen and Elizabeth Streets.) The telephone for general enquiries will be MF 5551.

Correspondence or enquiries calling for attention by the Victorian Administration of the Radio Branch, should continue to be directed to the Superintendent, Radio Branch, Postmaster-General's Department, 425 St. Kilda Road, Melbourne, S.C.2 (Telephone: BM 2873)

Low Drift Crystals FOR AMATEUR BANDS

ACCURACY 0.02% OF STATED FREQUENCY

3.5 Mc. and 7 Mc.

Unmounted	£2 10 0
Mounted	£3 6 0

12.5 and 14 Mc. Fundamental Crystals, "Low Drift,"
Mounted only, £5.

THESE PRICES DO NOT INCLUDE SALES TAX.

Spot Frequency Crystals
Prices on Application.

Regrids £1/10 0

MAXWELL HOWDEN
15 CLAREMONT CRES.,
CANTERBURY, E.7,
VICTORIA

REMEMBRANCE DAY CONTEST, 1959, RESULTS

COMFORTABLE WIN BY TASMANIA

HONOURS this year go to Tasmania for winning the Trophy with a comfortably margin from Western Australia, the present holders of the Trophy. The participation percentage was the greatest factor in determining the results and in this regard credit must be given to Tasmania and Western Australia for their organisation which was clearly apparent from the small number of logs not submitted from those States. While no accurate figures are possible for the number of missing logs on account of the possibility of mistaken calls, the approximate number is as follows: VK2 53 (43% of the total starters), VK3 36 (30%), VK4 17 (30%), VK5 23 (26%), VK6 2 (2%), VK7 1 (1%).

An award has been made to South Australia for gaining the Highest Log Average.

A number of logs were received which, although accurate, were poorly set out and made the task of the checkers more arduous. A sudden drop in accuracy in one log caused the Committee some concern until it was realised that the young hopeful (?), who had copied the log out, had got the call signs and the serial numbers out

of phase for a complete page! Another log became famous for being compiled on a sheet of paper nearly as large as a sheet of newspaper. Still others thought it would be easier for the Committee if the phone and c.w. contacts were shown separately, but of course this only made it more difficult to locate a particular contact from the serial number.

In the Receiving Section, some excellent listeners' logs were received. It was pleasing to note the interest shown by three Scout groups who submitted lengthy logs. However, there is no provision in the present rules for a group effort; consideration could well be given to incorporating a group section in next year's contest. Two of these logs did not comply with Rule 3 of the Receiving Section, but the third log (from the Second Wilston Senior Scout Group) was accurately compiled and the lads deserve special commendation for their efforts.

In order to make the results in the transmitting sections more interesting and informative, the number of contacts is shown in addition to the score for each competitor.

REMEMBRANCE DAY CONTEST 1959 RESULTS

State	Total	Average	Licens-	Log	Percent-	Total	State	Total	State	Total	Points
	Score	Score									
New South Wales	14513	813	1279	89	5.39	210	1595				
Victoria	18317	836	1228	84	6.84	230	2157				
Queensland	8975	506	417	39	9.35	178	1248				
South Australia	15563	845	445	61	13.71	255	2979				
Western Australia	13067	849	253	85	33.6	154	5239				
Tasmania	11689	705	130	65	50.0	180	6540				
Papua/New Guinea	2174	—	61	2							

STATE TROPHY Points

Tasmania	6540
----------	------

HIGHEST STATE LOG AVERAGE

South Australia	255
-----------------	-----

SECTION LEADERS

Phone—	Points
VK2AAH—N. A. Hanson	1015
3A1T—G. C. Trail	853
4PQ—N. L. Martin	940
5EN—A. R. Nitschke	1038
6CL—I. H. Clinch	921
7RX—K. A. Johnston	806

Open—

VK2BDO—E. L. Andrews	960
3ALZ—J. F. Berwick	975
4RH—A. L. Hoey	530
5WO—A. S. Condon	1085
6RU—J. E. Rumble	1072
7KA—K. E. Millin	771
9RQ—R. S. Gurr	1082

C.W.—

VK3QL—F. T. Hine	526
3ZO—N. L. Storck	380
4JF—J. C. Files	205
5XK—A. J. Hewitt	361
6VK—V. J. Kitney	168
7CH—C. Harrison	388
9AU—R. A. Taylor	121

New South Wales (Continued)

C.W.—

VK3SQL	155	526	TRJ	—	22	54
3GW	88	320	TRM	—	20	49
2HV	48	138	THZ	—	21	49
2ANU	20	86	HEO	—	4	15
2OW	34	71	—	—	—	—

VICTORIA

Top Six Logs—

VK1ALZ	975
3A1T	223
3ADW	845
3APJ	153
3OM	57
3HG	52

Phone—

VK1AIT	Cont. Pts.
3ADW	520
3AFJ	845
3OM	57
3DWS	52
3LW	190
3ASB	163
3ATM	181
3ADT	150
3AKF	478
3RN	147
3DF	100
3OP	134
3TC	108
3ADD	130
3AUG	118
3ATN	88
3NN	111
3EL	92
3AKF	143
3RN	176
3DF	107
3SAN	77
3SM	87
3AUL	92
3HJ	81
3ZU	63
3AEL	50
3EF	74
3NK	65
3PE	87

Cont. Pts.

3AEG	50	162
3IC	22	53
3WD	45	126
3PQ	35	125
3AGM	45	119
3ATS	51	110
3DZ	44	109
3ED	44	108
3GE	52	105
3DU	30	87
3ALD	29	86
3IC	22	85
3ARJ	22	85
3RZ	19	80
3AFY	25	75
3PP	20	70
3AHG	11	68
3EW	19	68
3AJN	10	67
3JO	8	26
3APP	8	20
3DG	10	15

Open—

VK3ZD	268	975	3XB	—	55	164
3HG	124	728	3XE	—	55	164
3APV	110	235	3PR	—	55	101
3XU	94	253	3OH	—	55	65
3ATR	58	194	3KH	—	55	47

C.W.—

VK3ZD	135	380	3K5	—	21	47
3AKHN	75	205	3QV	—	17	47
3ZD	62	214	3UW	—	14	24
3CK	29	92	3UM	—	9	22
3RJ	30	84	3VB	—	11	22
3ARV	31	77	3KR	—	8	15

QUEENSLAND

Top Six Logs—

VK4PQ	Points
4DJ	878
4FH	539
4RN	530
4SN	394
4LB	399

Phone—	Cont. Pts.
VK4PQ	218
4DJ	218
4FH	218
4RN	218
4SN	218
4LB	218

VK4PQ	Cont. Pts.
4DJ	218
4FH	218
4RN	218
4SN	218

VK4PQ	Cont. Pts.
4DJ	218
4FH	218
4RN	218
4SN	218

VK4PQ	Cont. Pts.
4DJ	218
4FH	218
4RN	218
4SN	218

VK4PQ	Cont. Pts.
4DJ	218
4FH	218
4RN	218
4SN	218

VK4PQ	Cont. Pts.
4DJ	218
4FH	218
4RN	218
4SN	218

VK4PQ	Cont. Pts.
4DJ	218
4FH	218
4RN	218
4SN	218

SOUTH AUSTRALIA

Top Six Logs—

	Points
VK5SWO	561 1055
APT	532 945
SMG	271 764
SKX	238 671
BKK	234 569
SKY	214 541
SEM	173 512
BJC	157 483
SGM	157 408
SEF	122 309
BTA	146 303
SAC	135 295
DXV	129 303
SMS	78 301
SOX	91 301
SQW	90 294
SHU	105 273
SAX	89 271
BHW	89 267
SOC	100 263
SRR	87 251
SEG	50 246
EDF	74 183

Phone—

	Cont. Pts.	Cont. Pts.	Points
VK5SWO	344 1085	VK5HJM	80 116
SLQ	137 415	AFY	35 104
SEU	119 402	RJG	41 45
SKU	81 129	STW	27 52
SFM	38 115		
C.W.—			
VK5XXK	117 361	VK5BEP	42 123
SMY	104 319	SRK	28 97
SBS	100 306	SDS	38 97
STL	59 168		

WESTERN AUSTRALIA

Top Six Logs—

	Points
VK5RU	1072
SLC	821
SKW	843
SWD	784
SDM	523
SDW	784
SSB	653

Phone—

	Cont. Pts.	Cont. Pts.	Points
VK5CL	252 811	SRH	12 43
SKW	214 843	GWI	23 53
SDW	261 784	GTR	30 61
SDX	237 651	GFW	18 48
SDG	168 445	GWT	30 47
SEV	123 447	GFT	18 47
SDA	123 341	GIZ	18 47
EWL	121 317	GIV	18 41
ERW	106 301	GAP	14 38
EXO	98 340	GKE	11 35
EZZ	91 317	GFS	18 31
EXG	87 317	GFT	18 31
EXU	81 226	GMO	10 30
EXR	78 306	GTY	14 39
EPH	71 186	GHK	12 39
ESI	75 194	GJM	12 39
SAG	70 184	GJM	11 32
SDM	70 184	GJM	11 32
SDG	61 186	GJM	12 39
SDU	61 186	GAL	10 32
EJO	71 158	GWM	8 23
EMM	56 181	GFT	7 21
SDX	63 139	GMB	7 21
SDA	50 137	GFT	7 20
EDC	50 137	GFT	7 20
SDC	50 137	GJM	7 19
SDR	46 132	GHR	5 19
ECW	37 105	GRO	7 16
GTR	46 101	GTR	8 15
GDH	46 97	GTR	7 15
SDO	32 93	GTR	7 15
EJH	21 52	GFD	6 14
GWJ	31 52	SBC	3 13
SEN	28 53		

Open—

	Points
VK5RUR	400 1073
SDM	506 923
SDX	444 653
SDR	444 653
C.W.—	
VK5VK	60 168
SAJ	26 90
SDA	26 90
SDH	19 52
SDW	17 50
SDW	13 50
EWG	18 48
EUF	14 48

TASMANIA

Top Six Logs—

	Points
VK5TRX	506
TKA	282
TAI	229
TEF	233
TPM	214
TWA	174
TTC	151
IDW	113
TMX	134
TXL	117
IJO	77
TCK	48
TDR	102
TFH	98
TCT	90
TAX	27
TEP	27
TRM	20
IPP	20
TDR	8
TJD	10
XXX	60
TPF	51
TMC	18
TTR	11
TAL	18
TCF	18
TLC	18
TLP	18
TTC	18
UJP	14
YDZ	6
TSI	7
TWI	7
TDK	7
TCA	6
TEJ	5
TSR	7

Phone—

	Cont. Pts.
VK5TRX	317
TAI	274
TAB	249
TEF	229
TPM	214
TWA	174
TTC	151
IDW	113
TMX	134
TXL	117
IJO	77
TCK	48
TDR	102
TFH	98
TCT	90
TAX	27
TEP	27
TRM	20
IPP	20
TDR	8
TJD	10
XXX	60
TPF	51
TMC	18
TTR	11
TAL	18
TCF	18
TLC	18
TLP	18
TTC	18
UJP	14
YDZ	6
TSI	7
TWI	7
TDK	7
TCA	6
TEJ	5
TSR	7

REMEMBRANCE DAY TROPHY



The Remembrance Day Trophy is held by the Tasmanian Division of the W.I.A. for 12 months.

PAPUA/NEW GUINEA

Open—

	Points
VK5RUR	364 1082

C.W.—

	Points
VK5AU	46 131

RECEIVING SECTION

New South Wales—

	Points
WIA-L2022	D. Grantley
L2022	T. L. Mills
L2024	A. T. Mullen
L2025	D. W. Shepherd
L2023	J. Thompson
L2027	B. Wood
L2026	L. McHugh
L2021	P. Carroll
L2020	B. J. Smyth
L2024	M. Thompson
L2014	F. J. Vernon
L2029	K. Dunham
L2047	D. Richardson
L2085	S. D. Neild
L2022	J. C. Hayes
L2026	J. M. Clode
L2120	R. Bent
L2079	P. Miles

Victoria—

WIA-L3061	B. R. Wilson
F. A. Barclay	
M. A. Cox	
L3065	L. D. Thomas
L3065	R. J. Simmonds
L3065	E. W. Treblecock
L3065	M. Cadine
L3065	J. S. Bellard
L3065	F. Seeler
L3038	D. H. Jenkins

Queensland—

E. C. A. Scott	
D. King	1017

South Australia—

WIA-L2015	G. H. Herden
WIA-L2015	W. J. Clayton
L3058	R. J. Simmonds
L3051	C. M. Hutchesson
L3058	F. W. Aslin
L3058	Mrs. O. J. Martin
K. E. Minchin	67

Western Australia—

WIA-L2003	F. H. Price
L. W. Cloud	711

Tasmania—

R. H. de Balfour	
M. Jenner	407
G. C. D'Enden	157
G. Ranft	81

Papua/New Guinea—

WIA-L2004	G. A. Greville
	194

Ineligible Logs—

First Brighton Senior Troop.	
First Maryborough Sea Scouts Senior Troop.	
Second Wiston Senior Scout Group.	

BOOKS OF THE YEAR FOR RADIO & T.V. ENTHUSIASTS

★ A.R.R.L. HANDBOOK, 1959 Edition	46/3 plus 2/- post
★ RADIO HANDBOOK, 15th Edition	85/6 .. 2/- ..
★ BASIC TELEVISION, by Grob, 2nd Edition	66/9 .. 2/- ..
★ RADIO DATA CHARTS, by Beatty & Sowerby, 5th Edition	12/6 .. 1/- ..
★ HAM RADIO HANDBOOK, by Hertzberg	8/6 .. 1/- ..
★ BEAM ANTENNA HANDBOOK, by Orr	32/6 .. 6d. ..
★ CARE AND REPAIR OF HI-FI, by Feldman	31/- .. 1/- ..
★ RADIOTRON DESIGNER'S HANDBOOK, by Langford Smith	55/- .. 2/6 ..
★ T.V. SERVICING GUIDE, by Deane & Young	20/9 .. 1/- ..
★ G.E. TRANSISTOR MANUAL	20/3 .. 1/- ..
★ RADIO VALVE DATA—WIRELESS WORLD	8/6 .. 9d. ..

McGILL'S AUTHORISED NEWSAGENCY

Est. 1860

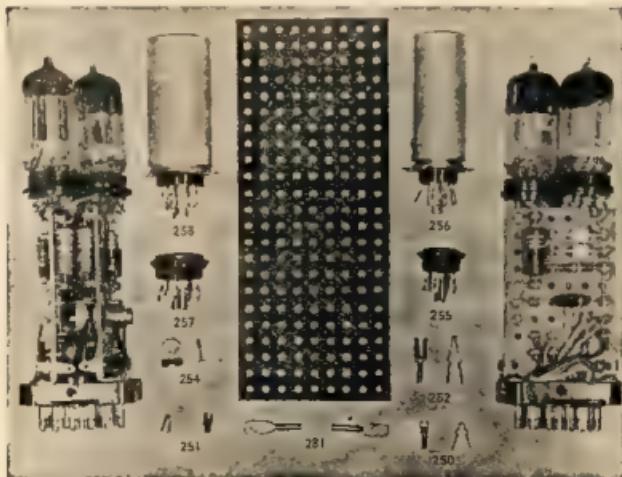
183-185 ELIZABETH STREET, MELBOURNE, C.1, VICTORIA

"The Post Office is opposite"

Phones: MY 1475-6-7

REDUCE THE SIZE AND COST OF YOUR NEW EQUIPMENT

TYPICAL UNITS USING ZEPHYR MATRIX SYSTEM



Leaflets and
Price List available
from all
leading Wholesalers.



Enquiries invited
from
Manufacturers.

ZEPHYR PRODUCTS PTY. LTD.

58 HIGH STREET, GLEN IRIS, S.E.6, VIC.
Phones: BL 1300, BL 4556

JOHN MOYLE REPORTS . . .

A CONFERENCE OF COMPROMISE

IN GENEVA, 1959

One of the most fascinating things about this conference has been to observe the way in which it has worked. In many ways it is unique, not only because of its enormous complexity and size, but because its chief aim is to make everyone happy by producing a result in which everybody's wants are satisfied, and every little requirement which can't be talked away must be met.

In most conferences, the participants expect to lose out on quite major matters which others will dispute, and are prepared to accept a vote on some basis or another should it be called upon to decide an issue.

But at I.T.U., a vote is one thing everybody tries to avoid. All kinds of conference devices, postponements and compromises are exploited should the possibility arise. Often matters just can't be simplified enough to produce a proposition on which a vote can be taken. Very rarely does any chairman decide to call for it, certainly in the smaller working groups, for these groups are specifically set up to provide an answer which will make it unnecessary to vote.

Naturally there is provision made for voting on the highest conference level which is the Plenary session, and sometimes, when a complete deadlock is reached on a clear issue, it must be taken.

There is even a procedure set down for a secret ballot if five or more countries ask for it.

This has happened more than once in a Plenary session over a dispute such as whether Communist China should be admitted or recognised by the I.T.U. Obviously that was a point which had to be decided one way or another, but few matters break down to such a simple proposition.

The principle is clearest in the evolution of the frequency table which is the most important subject from my point of view. Even here there are one or two matters which show every sign of reaching a deadlock, and might make voting necessary. But a great deal of work will have gone on beforehand in an endeavour to avoid this, and it is highly likely that such matters, now in committee, will be pursued all the way to a Plenary session before the final showdown.

The reason for this reluctance to vote at the conference is not hard to find. This is essentially a conference of sovereign nations who, by general agreement, are meeting as members of the I.T.U., which they have joined by voluntary application because they realise that the ether must be administered by common agreement for the common good.

Such agreements are honoured merely because the accredited representatives sign the final document on behalf of their Governments, thus indicating that they will abide by its provisions, a fact which amply justifies the existence of the Credentials Committee which examines the right of all representatives to sign.

But there can be no compulsion involved. If, as time goes on, a member country finds that it is having difficulty in keeping its contract, no one can stop it from breaking the agreement if it decides to do so.

The I.T.U. has not, and cannot have, any means by which it can over-ride the sovereign rights of its members to ignore their obligations if they so choose.

Violations of the Atlantic City agreement have taken place by some countries operating hf. broadcasting stations in exclusive Amateur bands in recent years, as we all know to our sorrow. Faced with their need to set



JOHN MOYLE, VK1JU
W.I.A. Representative at Geneva.

up stations, and being unable to obtain suitable channels in the official and over-crowded lists kept by the International Frequency Registration Board, the I.T.U. agency for this purpose, some have set up other types of stations out of band, and the vulnerable Amateur frequencies, particularly at 7 and 14 Mc., have been among the sufferers.

Behind every decision to alter the table, or to prohibit certain services from operating in a given band, there is always involved a problem of convenience and finance. Changes are inevitable with time, but it is of no use to make decisions which require exist-

ing services to change frequencies forthwith, for instance, with no consideration for the practicability of such a move.

Even if there is only one country concerned, with big investments in equipment, or without resources to commence a replacement programme, it would be useless to demand that it follow the decision of an arbitrary vote.

Multiply this simple example hundreds of times and you have the reason why this is a conference of compromise. There are nearly always some exceptions which have to be made to the rule.

From the view-point of the frequency table, therefore, every effort must be made to write the general requirements of the world into a classified form which is the table itself, and then to annotate it with all kinds of footnotes which say which countries are exempt from its provisions, or which are permitted to modify or to add to them.

And always this process involves careful consideration to avoid interference with those services which legitimately operate within the confines of the table, or of other footnotes thereto. Yes, it can become most complicated, and as a result takes months of effort, during which everybody is on the alert.

At the beginning of the conference the desirability of limiting these footnotes, and of wording them in such a way that they can be easily understood, was recognised by detailing a special committee to study and advise on the subject.

But as the conference progressed it became clear that we will end up with more footnotes than ever.

Even today, a report came into committee from a working group with 16 footnotes attached to one section of the table, and had to go back to the group for reconsideration on exactly the lines I describe here.

I have even observed a case where there were so many footnotes that the table itself was re-written to accommodate them, and the material in the table became eventually the subject of the footnotes!

One device used to ease the position is, of course, the division of the world up into three Regions. It would be an ideal solution to have every section of the table agreed to on a world-wide basis. Some bands because of their wide propagation characteristics can only be determined in this way, as, for instance, the 14 and 28 Mc. Amateur bands.

But there are others in which it is practical to allocate requirements on more localised geographical divisions such as Europe, Asia and Oceania, and North and South America, a very rough kind of approximation of the three Regions. Broadly speaking their needs can be grouped, although there are quite a few anomalies to be found in this imperfect arrangement.

Without the Regions, the footnote position would become even more confusing than it is today.

It is probably true to say that many footnotes come into existence as the result of second and third thoughts on the part of some countries.

(Continued on Page 16)

A CONFERENCE OF COMPROMISE

(Continued from Page 15)

When the conference began there were two big volumes of nicely printed proposals which purported to be the agenda. But because there were many who had not sent in proposals, it was obvious that there were more to come. There were.

AMENDMENTS TO PROPOSALS

On the first day delegates were presented with a pile of amendments as big as one of the original volumes. Since then so many more proposals have been received, many of them emerging from the course of events, that as far as the tables are concerned the original volumes are almost useless, and it has been necessary to publish the entire set of proposals in grouped and indexed form on roneoed sheets for the convenience of the working groups.

When tackling his section of the spectrum, the chairman of each working group or sub-working group first attempts to classify all those proposals which seem to indicate a certain trend, and to commence discussions on the remainder to see whether some can be withdrawn, combined, or otherwise fitted into a plan.

In the course of events, some countries, seeing that a concession is likely to be granted to another in the form of a footnote, decide that they too would like to be included in it. Before one can turn a hair, what was initially a small item has blown up into a big one, and we start all over again!

This has happened many times, when an apparently minor suggestion involving an Amateur band has suddenly gained support and expanded into a major threat about which drastic action has to be organised.

These are the occasions upon which the presence of many Amateur-minded people at the conference has been invaluable, for some of the attacks which have developed can only be described as vicious on the part of one or two countries, who have no love for Amateurs if their delegates are to be believed.

The menace of the footnote has caused me as much worry and headache as many straight proposals which can be met in the open and thrashed out for better or for worse. Even as I write, there are three or four which we are all watching very carefully in case they should get out of hand.

The same thing can, of course, be said of many proposals, particularly the lone proposal. Sometimes it is so removed from the general picture that the innocent could be pardoned for ignoring it as likely to be voted out. After he discovers that voting out is a last resort, he wakes up to the fact that many countries who rather lean towards the lone proposal's provisions are quite happy to leave it there to see what happens, jumping joyfully and rapidly on the bandwagon at the appropriate moment so that the lone proposal suddenly finds itself surrounded by friends.

When that happens there is a real scurry, other countries reserve their positions right and left, and usually the matter is held over until the next meet-

TECHNICAL TOPICS

ANTENNAE FOR FIELD DAY OR PORTABLE OPERATION

THE first requirements of an antenna for portable work are: (1) That it should be easy to transport and erect; and (2) That it should efficiently radiate the limited power available from portable transmitters.

The first type of antenna which comes to mind for portable work is the whip type as used in various Army transceivers, but, while this type meets requirement (1) perfectly, it is not an efficient radiator unless its length approaches a quarter wave, which makes it an impossible size on 7 Mc. and 3.5 Mc. For mobile work, the whip is the only practical antenna and it is possible to considerably improve its efficiency by centre loading with high Q coils, but even so, it is still much less effective than a half wave antenna.

If for increased efficiency, we decide to use a half or quarter wave wire, then supports are needed and these can be found in trees. It will be necessary to select a site for field day operation which as well as good propagation characteristics, has suitable trees spaced the right distance for the bands to be used. In erecting the wires, it is not necessary to climb the trees but proceed as follows:

Use a fishing line of length more than twice the height of the tree and tie a weight such as a large nut on one end. Swing this weight around like a sling shot or fisherman casting and let it go over the top of the tree. This requires a little practice.

If the line is checked before the weight reaches the ground, it will swing like a pendulum, wrap itself round a high bough and take no further part

ing by which time some heart-to-heart talks take place among all concerned.

The man who thinks his special propositions are completely safe at this conference, particularly where there has been some difference of opinion and an uneasy truce, can never be certain when the whole thing is likely to blow up again in his face, with a totally unexpected result.

And it can happen right up to the moment when the final articles are signed.

For, as I said at the start, this is a conference of compromise as far as frequency allocations are concerned, in which everybody's voice has a right to be heard, and in which every nation has an equal standing and can demand that its wants be met.

The art is to do it without ending up with a table which means nothing at all.

The danger that exactly this will happen is well recognised, and at this moment a special study group is examining certain sections of the spectrum in the hope of future planning to restore some kind of long term order.

Because if this is not done, the policy of compromise will lead to complete chaos, which many consider isn't very far away.

in the operation, so it is best to have a spare weight and line available.

When the line is across the tree, the aerial can be tied to one end and the line used as a halyard.

An alternative method to the sling is to use a bow and arrow but in any case don't let the weight or the arrow fall back on your head or your car.

Suitable types of wire antennae are:

(1) The folded dipole. This is one of the most efficient half wave radiators. It can be coupled direct to the tank coil link and does not require an aerial tuning unit. If made of 300 ohm ribbon throughout, it is easy to handle and does not tangle like wire. It has the disadvantage of being strictly a one-band antenna and it would be expensive to have a 300 ohm ribbon folded dipole for each band.

(2) The vertical quarter wave. The length is approximately 66 feet for 3.5 Mc., 33 feet for 7 Mc., and 18 feet for 14 Mc. This antenna requires a good ground and for portable operation in open spaces it is probably easier to provide four quarter wave radials and make it a ground plane antenna which concentrates the signal into low angles. The vertical radiator could be hauled up to an overhanging tree and the four radials run out at a small downward angle with long extension cords and tied to pegs in the ground or other trees. With downward radials a 50 ohm feeder would be an approximate match and in any case would be very short.

(3) The all-band antenna.—130 feet centre fed with 66 ft. open wire tuned feeders. This requires an aerial tuning unit which is an additional piece of gear to set up. The feeders and the spacers can get into tangles and be awkward to sort out. Once up, however, this antenna allows band changing without alteration to the antenna.

(4) The all-band antenna with dipoles cut for each band and all fed by the same 70 ohm feeder. This would be very good for quick band changing but unless the dipoles are made of insulated wire, it might be difficult to keep them separated in antenna required for quick erection.

If the antenna is required for Field Day operation and the Contest is held in daylight only, as in recent years, then probably operation would be most profitable in two bands—7 and 14 Mc. For these two bands it is suggested that two antennae be used, the choice being the folded dipole for 7 Mc. and the ground plane for 14 Mc.

If the Contest is to run for 24 hours, then an additional antenna for 3.5 Mc. or an all-band antenna would be required.

J.A.G.

RESULTS OF VK9 3.5 Mc. CONTEST

The 3.5 Mc. Contest conducted by the Papua/New Guinea Division of the W.I.A. during July was won by VK9XKK with VK9RKO filling second place.

Despite periods of very high noise level, contacts were obtained with U.S.A. and Japan, and many VK and ZL stations took the opportunity of gaining a contact with VK9 in this band.

The Division wishes to thank all those who participated and helped make the Contest a success.

An Economical Receiver for S.W. Listening

D. M. GRANTLEY,* WIA-L2022

SINCE publication of my article on Short Wave Listening in "Amateur Radio" of April 1959, I have had quite a number of letters seeking information on the conversion of the Number 19 Receiver. In view of this, here is the information as already supplied to the chaps who enquired from me, hoping that it may be of interest to some of the other s.w.l's.

Let me point out at this stage that the original receiver which I used for many months was not converted by myself, but by VK2RS. The v.h.f. communicator and main transmitter in this case were removed, and I built a power supply in its place. But there is a far easier way to get this remarkable receiver working, and it does not involve the removal of any part of the transmitter, thus enabling the listener to have his first rig when he gets his ticket.

There are two plugs on the front panel of the set; one is a 6-pin, the other a 12-pin. The output is taken from pin 4 of the 12-pin plug and the

other connections we worry about are on the 6-pin. Pin 4 is the 500v. point, and pin 6 is the 275v. point. (I use only one supply of about 300v.)

The only other task remaining is to alter the filament wiring from 12v. to 6v., and like most things there is an easy way of doing it. Simply locate an easily accessible valve socket (and you will find that the 807, being lower than the rest, and more or less in the clear, is the logical choice), earth the filament pin which is connected to the 12v. supply and connect the 6v. lead to the other filament pin. This being completed, you should have 6v. on all the filaments; if not, a quick inspection of the filament circuit will no doubt enable one to locate the fault and rectify it. I have converted several by this method, and it seems to do the trick successfully. Pin 3 on the 6-pin plug is the supply point for the 11-t.

Having completed these few adjustments, all that remains to do is to fire the gear up and unless there is something radically wrong, it will go.

If it is decided to remove the transmitter from the transceiver, there will

then be plenty of room to build a power supply and thus have a self-contained unit. Any conventional supply delivering 6v. i.t. and about 300v. h.t. will suffice.

Two adjectives, "remarkable" and "inexpensive" have been used in the course of this article, the latter cannot be disputed, as a perusal of the various dealers' advertisements reveal an average price of less than £5, which in view of the little work to be done on it, is most reasonable. For its size and age, it is a most remarkable little set I have had considerable success with it, both on its own range and with a converter for the higher frequencies. There is plenty of power at the output and although designed for headphones operation, it operates a speaker at good strength.

A certain measure of bandspread can be given by removing all moving plates except one in each section of the band, and soldering a 50 pF. silver mica capacitor across each of the four trimmers beneath the chassis on the 1f. band. I have not tried it, as my converter has full bandspread on all bands, but according to G3IDM in the R.S.G.B. "Bulletin," Feb. '59, it gives a spread on 80 metres to over three-quarters of the dial, and extending 40 metres to over half an inch—which is over three times the coverage in the original form.

Care is needed in the selection of the actual machine, as some of them are heavily tropic-proofed, and it is advisable to inspect the "works" of the set before purchasing. It may be just a co-incidence, but of the ones I have worked on, the ones in good clean condition were the ones which have the various controls labelled in Russian. Circuits are included in some of the cases, but in case they are not, one can be obtained for a nominal charge through the VK2 Division.

Now go to it you s.w.l's, and if you cannot win an R.D. Contest on this gear, then you want to give the game away.

CHOOSE THE BEST—IT COSTS NO MORE



O. T. LEMPIRIE & CO. LIMITED

Head Office: 27-41 Bowden Street, Alexandria, N.S.W.
and at Melbourne • Brisbane • Adelaide • Perth

BINDERS for "AMATEUR RADIO"

★ Solid Cover bound in black Fabrex with wire attachment for easy filing of copies.

Price **16/6** each

POSTAGE EXTRA:
Victoria 2/-; Interstate 3/-.

RADIO & ELECTRICAL DIARIES.
COLLINS POCKET DIARIES.

PRICE: 14/-, 15/2.

NORMAN BROS. LTD.

60 ELIZABETH STREET,
MELBOURNE, VIC.

ANNOUNCEMENTS

N.S.W. Divisional Convention will be held on 30th January, 1960, at V75W1, Quarry Hill, Blackwood. Good prizes, 3 mx. bandfold to hunt, excellent entertainment, and some displays gear are some of the features. A real get-together for all at reasonable cost. Full details in your Bulletin and Broadcasts, so join us at Dural for another enjoyable Convention.

Victorian Zones and Clubs. Secretaries of zones and affiliated clubs, enter your name of the trophy, presented by the Victorian Divisional Council of the W.L.A., for the best score returned by a zone or club in the National Field Day Contest. Further details will be found in the Victorian notes in this issue.

UNIFORMS DUST COATS

for your Office Staff, Factory,
Workshop, Servicemen.

*
Bowls Frocks, Tennis Frocks,
for the retail trade.

D. MILBURN & CO.

3 Railway Avenue, East Malvern,
S.E.5, Vic. Phone: UL 3131

SWL

Maurice Cox, WIA-L3055
Flat 1, 37 Boyd Crescent,
Olympic Village, Heidelberg,
N.S.W., Victoria

Hi fellow short wave listeners. How are you receiving those days? Are the bands improving? I would like to hear from any of you chaps, how about it?

Now to the news of this month. Had a letter from Ian Thomas, L3055. He says: "Over the week-end while I was listening in on the 'QSL worldwide DX contest' thought it occurred to me to have a competition, how about that, hi?" Why not use this contest as the means of a contest among short wave listeners in this country. As you are probably aware, there is no receiving section in the contests, so this may be the way of helping to stimulate interest in short wave listening. I will follow closely the format of the rules for the 'tx section'. Ian says that following the rules he would have scored 10,608 points. Thanks, Ian, for the letter and we will go into the rules next month. Let's see if our short wave countries keep up the listening. This is the only letter I have had this month. I haven't heard from VK5 for some months. They came in with a burst, but soon fizzled out. How about it? VK5! Drop us a line or two.

The Manilla L3032 and myself want to make a visit to America next year, but need to contact the States who have inquired. If you want help, we will help you all we can.

VKS GROUP NEWS

Our last meeting was held with the presence of seven members. We had a good time. Mac Hilliard played us a tape recording of 20 to 70 Mc. signals heard by an Amateur in Salisbury, South Rhodesia. They consisted of V.H.F. and some Amateur sigs, from Europe. Then he played a tape of the JA opening last year to VK5L. Thanks very much Mac, most interesting.

Very shortly I hope to send to all VKS members a list of doings and lectures of interest for the next 12 months.

We have been given approval to send to High and Technical School Headmasters a letter to try and gain more young members for the Group. This will start shortly. Also a letter will be forwarded to all the associate members in VKS, so chaps, look forward to bigger membership with more and more events.

Now some notes from Don Granthey, L3032.

QSL LADDER

This is the first month for our new innovation, and owing to the limited time for preparation, he regrets that very little is to hand for our first issue.

For new contributors, if you want to be in future lists, please send your scores to D. Granthey, Brookdale, N.S.W. or to Maurice Cox, P.O. Box 111, Albury. Scores wanted are countries heard, confirmed and unconfirmed, these scores being your all-time results, not the ones pertaining to the present year.

CONFIRMED

Name	Heard	Countries	Zones
Don Trishbrock	250	347	40
Don Granthey	168	45	35
Mac Hilliard	123	45	35
Maurice Cox ..	181	18	18
Ian Thomas ..	72	18	18

ALBURY RADIO CLUB

Look for some s.w.l. activity amongst the associate members in the near future. Don Rod Bent has every reason to believe that there will be out of the s.w.l. ranks by the time this reaches you. However, there are several new members coming along, one of them being Rod Bent, the staff of a local newspaper. Rod is around the 19 mark, interested in radio only as a hobby, and is the newest member of the club.

Under the wing of L3022 for a couple of years now, Rod has become a good operator, and was one of the entrants in this year's R.D. Contest. A real builder, Rod is at present undertaking the task of building himself an all band rx to further his listening.

CONTESTES

No Contests this month, the next for the VK s.w.l.'s being the National Field Day in January. Not a large number of entries in the VK/2ZL Contest, which is to be regretted. L3022 sends his apologies to the s.w.l.'s for his absence from the Contest, due to circumstances beyond his control.

There is the Ross Hull Memorial Contest. See details elsewhere in this issue.—Editor!

BX NEWS FOR VK5L

Any listeners awaiting cards from STXKO need not despair, they will get them late 1960 when he returns to G land.

VPHCC's outstanding s.w.l. report now being answered.

Fred G. Hoaray, Tampon, Reunion Is., and EASAIF, Box 182, Fernando Po, are two new QTHs of interest.

THE THIRTEEN HUNDRED

It is at it again, according to Monitor, the VK's official magazine. This time calling himself 'The Thirteen', Tim Mills and Fred Granthey were seen in a huddle at one stage whilst L3032, L3055, the Tumbarumba gang complete with chief of staff, Leo SALSQ; others from Hay, Albury, and Griffith added to the numbers. Paul listeners in Ted 1ACD and Don 2RS were sighted.

Thanks very much, Den, for your contribution again.

VKS S.W. ZONE CONVENTION

Many of our s.w.l.'s from N.S.W. were to be over here on October 1st. Narrabeen Park, and together on October 2nd, The Mills and Fred Granthey were seen in a huddle at one stage whilst L3032, L3055, the Tumbarumba gang complete with chief of staff, Leo SALSQ; others from Hay, Albury, and Griffith added to the numbers. Paul listeners in Ted 1ACD and Don 2RS were sighted.

Thanks very much, Den, for your contribution again.

VKS GROUP NEWS

Our membership has passed No. 170, being about 139 members in circulation.

Our monthly news suppliers, Barry L3030, has vanished from the meetings. How about a bit of news Barry?

An ex-member, Vol L3025, now has his full ticket with the call of ZVO. Vol has in just over 13 months studied for the A.O.C.P. with our correspondence course. He spent three months in the course, then did ADD and worked some 50 2 m station. Now he is on 49 with AT3, running 126 watts. Rx is 115. Ant. a half wave and QTM Woolahra. Concats Vol.

September Lecture.—We went alone to the V.H.F. meeting and heard two very good lectures by Tim and Keith. Tim on 's.s.b. and their 'hotting up' and Keith ZBK on 's.s.b. and Command Rx's. Our thanks to them for a very interesting evening.

Our November meeting will be dealing with the awards and we hope to see as many as possible attending. We are disappointed with the roll up at the meetings, especially during the winter. Well the winter's over, we hope! Tim hopes that in the not too distant future things will improve.

Don't forget the December meeting. We will be attending the yearly auction of the v.h.f. boys, so here is your chance to get something for the shack or the door stop.

Now the Amateur is progressive. He keeps his station ahead of science. It is built well and efficiently. His operating practice is clean and professional. The amateur point of view of Amateur Code and the same can be said for the s.w.l.'s. The State membership is growing more and more.

Many thanks to all who did so much for the Grand Prix Chatswood Town Hall in the Youth Festival. Thanks to all who have supplied information to this page, for after all it is for your use and it is for you to say what you want. I have a letter from VK5L, the interest in a w.l.i.m. is there and it is only a matter of time before they are in it.

Awards: This is another subject in another way and if you look at July "A.R.", page 25, you will note that F.Y.K. has given us the job of recommending awards. This State has the task of formulating awards for the whole of VK. Please let us know your ideas on the subject so we can pass on to F.Y.K. and send them in. Think it over and do the best for VK.

Distress Frequencies: Shipping c.w. on 800 Kc., R/T on 2182 Kc., survival craft 8384 Kc.; aircraft 8540 Kc., or on their designated route. 8540 Kc. is listed as a distress frequency used by Radio Moscow 1000 Kc. and Thailand 250 watts. If you want good code practice, try the weather reports on 500 Kc. at 10 p.m. n.t. and 2355 hours.

Australian Call Signs: Letters assigned to Australia are AXA-ZAK, VHA-VNZ, VZA-VZZ.

Eaglehawk: Via the 600-ohm line, and other means.

The v.h.f. Sold, the following has come to Night: On 81 Mc., watch for ZL t.v. sound at 1830 E.A.S.T. for half an hour. On the Six Hour mark, end, some of the Sydney v.h.f. boys are going "bush" to try some DX on 2 m. 2182 will give a good signal.

Did you drop me a line to let the boys know you are still on deck. At the moment he is on long service leave and is in VK4. Using a BUCH2D, he has been raking in the DX. Ken L3029 in Shellharbour has been chasing the DX before the paper run in the mornings; the house is in a neighbourhood two doors away in whose North Queensland home one end of his Wyndom. Hope you can get ZAKM on the bands and that you get the 30 m quad up, and we hope you get rid of the lf. problem.

Roy L3068—get on to Barney L3061 for QSLing. Thanks Rodney L3072 for the DX news. Roy, I am still on deck. On the 2nd day of the month, at 1931 E.A.S.T. on 11480 and 15335 Kc in the VK3 transmitters at 1830 to 2030 hours. Swiss Broadcasting Corporation 13305, 13865 and 2330 Kc. at 1450 E.A.S.T. every Saturday during its second transmission to the U.S.A. between 1418 and 1800 in DX corner. Thanks Rod.

Don L3033 near Casino is using a home brew rx. five tube, battery superhet, with a 1 tube pre-selector switched 4 to 10. Aerial is 87 ft. end fed Zep. I would like to welcome Alan Westcott to this Group. He comes from North Queensland. His number (at present) is WIA-L3138/VK4. Might be a Group in VK4 soon.

DX as the b.e. band, from Gerry L3011. Times are E.A.S.T. Programme of NEKK Tokyo. The first programme can be heard on JOAK 1000, 0000-0030 Kc., 0100-0130 Kc., 0130-0150 Kc., 0200-0230 Kc., 0300-0330 Kc., 0400-0430 Kc., 0500-0530 Kc., 0600-0630 Kc., 0700-0730 Kc., 0800-0830 Kc., 0900-0930 Kc., North Luzon, Manila, 1140 Kc., 0000-0030. North Luzon in English 0130-0200, close down.

Philippines: DEBB Manilla, 880 Kc., 0000-0030, close down. DZAQ Cebu, 830 Kc., 0115-0130 Kc., 0200-0230, close down.

Hawaii: PKOA, 830 Kc., sometimes 0130 to about 0800, KOU, 780 Kc., after 0100 till fade out about 0230.

Voice of Americas Amateur Programmes Sunday 1815-1830 hours: 15165, 15210, 19170, 21185, 11785, 9780, 9700, 8885, 9230 and 9250 Kc.

Sunday 1715-1730 hours: 19485, 18380, 16390, 11810 and 9700 Kc.

Sunday 2215-2230 hours: 20860, 20580, 21735, 21445, 15330, 15380, 11875, 11970, 12025, 12075, 12120, 12170, 12210, 12250, 12300, 12345, 12390, 12435, 12485, 12530, 12575, 12620, 12665, 12710, 12755, 12800, 12845, 12890, 12935, 12980, 13025, 13070, 13115, 13160, 13205, 13250, 13295, 13340, 13385, 13430, 13475, 13520, 13565, 13610, 13655, 13700, 13745, 13790, 13835, 13880, 13925, 13970, 14015, 14060, 14105, 14150, 14195, 14240, 14285, 14330, 14375, 14420, 14465, 14510, 14555, 14600, 14645, 14690, 14735, 14780, 14825, 14870, 14915, 14960, 15005, 15050, 15095, 15140, 15185, 15230, 15275, 15320, 15365, 15410, 15455, 15500, 15545, 15590, 15635, 15680, 15725, 15770, 15815, 15860, 15905, 15950, 15995, 16035, 16080, 16125, 16170, 16215, 16260, 16305, 16350, 16395, 16440, 16485, 16530, 16575, 16620, 16665, 16710, 16755, 16800, 16845, 16890, 16935, 16980, 17025, 17070, 17115, 17160, 17205, 17250, 17295, 17340, 17385, 17430, 17475, 17520, 17565, 17610, 17655, 17700, 17745, 17790, 17835, 17880, 17925, 17970, 18015, 18060, 18105, 18150, 18195, 18240, 18285, 18330, 18375, 18420, 18465, 18510, 18555, 18600, 18645, 18690, 18735, 18780, 18825, 18870, 18915, 18960, 19005, 19050, 19095, 19140, 19185, 19230, 19275, 19320, 19365, 19410, 19455, 19500, 19545, 19590, 19635, 19680, 19725, 19770, 19815, 19860, 19905, 19950, 20000, 20045, 20090, 20135, 20180, 20225, 20270, 20315, 20360, 20405, 20450, 20495, 20540, 20585, 20630, 20675, 20720, 20765, 20810, 20855, 20900, 20945, 20990, 21035, 21080, 21125, 21170, 21215, 21260, 21305, 21350, 21395, 21440, 21485, 21530, 21575, 21620, 21665, 21710, 21755, 21800, 21845, 21890, 21935, 21980, 22025, 22070, 22115, 22160, 22205, 22250, 22295, 22340, 22385, 22430, 22475, 22520, 22565, 22610, 22655, 22700, 22745, 22790, 22835, 22880, 22925, 22970, 23015, 23060, 23105, 23150, 23195, 23240, 23285, 23330, 23375, 23420, 23465, 23510, 23555, 23600, 23645, 23690, 23735, 23780, 23825, 23870, 23915, 23960, 24005, 24050, 24095, 24140, 24185, 24230, 24275, 24320, 24365, 24410, 24455, 24500, 24545, 24590, 24635, 24680, 24725, 24770, 24815, 24860, 24905, 24950, 25000, 25045, 25090, 25135, 25180, 25225, 25270, 25315, 25360, 25405, 25450, 25495, 25540, 25585, 25630, 25675, 25720, 25765, 25810, 25855, 25900, 25945, 25990, 26035, 26080, 26125, 26170, 26215, 26260, 26305, 26350, 26395, 26440, 26485, 26530, 26575, 26620, 26665, 26710, 26755, 26800, 26845, 26890, 26935, 26980, 27025, 27070, 27115, 27160, 27205, 27250, 27295, 27340, 27385, 27430, 27475, 27520, 27565, 27610, 27655, 27700, 27745, 27790, 27835, 27880, 27925, 27970, 28015, 28060, 28105, 28150, 28195, 28240, 28285, 28330, 28375, 28420, 28465, 28510, 28555, 28600, 28645, 28690, 28735, 28780, 28825, 28870, 28915, 28960, 29005, 29050, 29095, 29140, 29185, 29230, 29275, 29320, 29365, 29410, 29455, 29500, 29545, 29590, 29635, 29680, 29725, 29770, 29815, 29860, 29905, 29950, 29995, 30040, 30085, 30130, 30175, 30220, 30265, 30310, 30355, 30400, 30445, 30490, 30535, 30580, 30625, 30670, 30715, 30760, 30805, 30850, 30895, 30940, 30985, 31030, 31075, 31120, 31165, 31210, 31255, 31300, 31345, 31390, 31435, 31480, 31525, 31570, 31615, 31660, 31705, 31750, 31795, 31840, 31885, 31930, 31975, 32020, 32065, 32110, 32155, 32190, 32235, 32280, 32325, 32370, 32415, 32460, 32505, 32550, 32595, 32640, 32685, 32730, 32775, 32820, 32865, 32910, 32955, 32990, 33035, 33080, 33125, 33170, 33215, 33260, 33305, 33350, 33395, 33440, 33485, 33530, 33575, 33620, 33665, 33710, 33755, 33800, 33845, 33890, 33935, 33980, 34025, 34070, 34115, 34160, 34205, 34250, 34295, 34340, 34385, 34430, 34475, 34520, 34565, 34610, 34655, 34700, 34745, 34790, 34835, 34880, 34925, 34970, 35015, 35060, 35105, 35150, 35195, 35240, 35285, 35330, 35375, 35420, 35465, 35510, 35555, 35600, 35645, 35690, 35735, 35780, 35825, 35870, 35915, 35960, 36005, 36050, 36095, 36140, 36185, 36230, 36275, 36320, 36365, 36410, 36455, 36500, 36545, 36590, 36635, 36680, 36725, 36770, 36815, 36860, 36905, 36950, 37000, 37045, 37090, 37135, 37180, 37225, 37270, 37315, 37360, 37405, 37450, 37495, 37540, 37585, 37630, 37675, 37720, 37765, 37810, 37855, 37900, 37945, 37990, 38035, 38080, 38125, 38170, 38215, 38260, 38305, 38350, 38395, 38440, 38485, 38530, 38575, 38620, 38665, 38710, 38755, 38800, 38845, 38890, 38935, 38980, 39025, 39070, 39115, 39160, 39205, 39250, 39295, 39340, 39385, 39430, 39475, 39520, 39565, 39610, 39655, 39700, 39745, 39790, 39835, 39880, 39925, 39970, 40015, 40060, 40105, 40150, 40195, 40240, 40285, 40330, 40375, 40420, 40465, 40510, 40555, 40600, 40645, 40690, 40735, 40780, 40825, 40870, 40915, 40960, 41005, 41050, 41095, 41140, 41185, 41230, 41275, 41320, 41365, 41410, 41455, 41500, 41545, 41590, 41635, 41680, 41725, 41770, 41815, 41860, 41905, 41950, 42000, 42045, 42090, 42135, 42180, 42225, 42270, 42315, 42360, 42405, 42450, 42495, 42540, 42585, 42630, 42675, 42720, 42765, 42810, 42855, 42900, 42945, 42990, 43035, 43080, 43125, 43170, 43215, 43260, 43305, 43350, 43395, 43440, 43485, 43530, 43575, 43620, 43665, 43710, 43755, 43800, 43845, 43890, 43935, 43980, 44025, 44070, 44115, 44160, 44205, 44250, 44295, 44340, 44385, 44430, 44475, 44520, 44565, 44610, 44655, 44700, 44745, 44790, 44835, 44880, 44925, 44970, 45015, 45060, 45105, 45150, 45195, 45240, 45285, 45330, 45375, 45420, 45465, 45510, 45555, 45600, 45645, 45690, 45735, 45780, 45825, 45870, 45915, 45960, 46005, 46050, 46095, 46140, 46185, 46230, 46275, 46320, 46365, 46410, 46455, 46500, 46545, 46590, 46635, 46680, 46725, 46770, 46815, 46860, 46905, 46950, 47000, 47045, 47090, 47135, 47180, 47225, 47270, 47315, 47360, 47405, 47450, 47495, 47540, 47585, 47630, 47675, 47720, 47765, 47810, 47855, 47890, 47935, 47980, 48025, 48070, 48115, 48160, 48205, 48250, 48295, 48340, 48385, 48430, 48475, 48520, 48565, 48610, 48655, 48700, 48745, 48790, 48835, 48880, 48925, 48970, 49015, 49060, 49105, 49150, 49195, 49240, 49285, 49330, 49375, 49420, 49465, 49510, 49555, 49600, 49645, 49690, 49735, 49780, 49825, 49870, 49915, 49960, 50005, 50050, 50095, 50140, 50185, 50230, 50275, 50320, 50365, 50410, 50455, 50500, 50545, 50590, 50635, 50680, 50725, 50770, 50815, 50860, 50905, 50950, 51000, 51045, 51090, 51135, 51180, 51225, 51270, 51315, 51360, 51405, 51450, 51495, 51540, 51585, 51630, 51675, 51720, 51765, 51810, 51855, 51900, 51945, 51990, 52035, 52080, 52125, 52170, 52215, 52260, 52305, 52350, 52395, 52440, 52485, 52530, 52575, 52620, 52665, 52710, 52755, 52800, 52845, 52890, 52935, 52980, 53025, 53070, 53115, 53160, 53205, 53250, 53295, 53340, 53385, 53430, 53475, 53520, 53565, 53610, 53655, 53700, 53745, 53790, 53835, 53880, 53925, 53970, 54015, 54060, 54105, 54150, 54195, 54240, 54285, 54330, 54375, 54420, 54465, 54510, 54555, 54600, 54645, 54690, 54735, 54780, 54825, 54870, 54915, 54960, 55005, 55050, 55095, 55140, 55185, 55230, 55275, 55320, 55365, 55410, 55455, 55500, 55545, 55590, 55635, 55680, 55725, 55770, 55815, 55860, 55905, 55950, 56000, 56045, 56090, 56135, 56180, 56225, 56270, 56315, 56360, 56405, 56450, 56495, 56540, 56585, 56630, 56675, 56720, 56765, 56810, 56855, 56900, 56945, 56990, 57035, 57080, 57125, 57170, 57215, 57260, 57305, 57350, 57395, 57440, 57485, 57530, 57575, 57620, 57665, 57710, 57755, 57800, 57845, 57890, 57935

THE PUBLIC SERVICE OF
PAPUA AND NEW GUINEA

RADIO TECHNICIANS

Senior Radio Technician

(several positions)

£1,310-1,370 p.a. (single)

£1,435-1,495 p.a. (married)
(actual rates)

Qualifications: Qualified as P.M.G.
Senior Technical (Radio) or
equivalent.

Duties: In charge transmitting and
receiving stations, v.h.f., m.f./
h.f., c.w. and radio-telephone
trunk and out-station services.

Radio Technician

(several positions)

£1,140-1,250 p.a. (single)

£1,265-1,375 p.a. (married)
(actual rates)

Qualifications: Qualified as P.M.G.
Technician (Radio) or equivalent
(persons qualifying this
year may apply).

Duties: Assist in maintenance and
installation of communications
transmitters and receivers, v.h.f.
and m.f./h.f.

Appointment: Permanent or fixed
term appointment. Officers of
Commonwealth Public Service
will be considered for transfer
pursuant to Section 43 of Public
Service Act for period of up to
two years in first instance.

Accommodation: Single quarters
available; married accommodation
unlikely to be available under
18 month from date of
appointment.

Separation Allowance: Payable at
discretion of Territory Adminis-
tration; designed to compensate
for added expense of mar-
ried appointees obliged to main-
tain family outside Territory.

Leave: Three months after each
21 months in Territory and six
months' furlough after 20 years.
If permanent, additional three
months' leave after each six
years.

Further Information: An informa-
tion handbook on the Territory
and its Public Service is avail-
able from Department of Ter-
ritories, Canberra or Sydney, or
from any Commonwealth Pub-
lic Service Inspector, Common-
wealth Employment Office or
official country Post Office.
Other enquiries to Department of
Territories, Canberra (phone
70411, Ext. 28A).

APPLICATIONS

SUBMIT on prescribed form
available from above offices.

TO—The Secretary, Department
of Territories, Canberra, by 18th
December, 1959.

PREDICTION CHART, DEC. '59

E. AUSTRALIA — W. EUROPE S.E.										E. AUSTRALIA — W. EUROPE S.E.															
0	2	4	6	8	10	12	14	16	18	20	22	24	0	2	4	6	8	10	12	14	16	18	20	22	24
45	—	—	—	—	—	—	—	—	—	—	—	—	45	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	—	—	—	—	25	—	—	—	—	—	—	—	—	—	—	—	—
22	—	—	—	—	—	—	—	—	—	—	—	—	22	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—	—	—	14	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	—	—	—	—

E. AUSTRALIA — W. EUROPE L.N.										E. AUSTRALIA — W. EUROPE L.N.															
0	2	4	6	8	10	12	14	16	18	20	22	24	0	2	4	6	8	10	12	14	16	18	20	22	24
45	—	—	—	—	—	—	—	—	—	—	—	—	45	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	—	—	—	—	25	—	—	—	—	—	—	—	—	—	—	—	—
21	—	—	—	—	—	—	—	—	—	—	—	—	21	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—	—	—	14	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	—	—	—	—

E. AUSTRALIA — MEDITERRANEAN										E. AUSTRALIA — MEDITERRANEAN															
0	2	4	6	8	10	12	14	16	18	20	22	24	0	2	4	6	8	10	12	14	16	18	20	22	24
45	—	—	—	—	—	—	—	—	—	—	—	—	45	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	—	—	—	—	25	—	—	—	—	—	—	—	—	—	—	—	—
21	—	—	—	—	—	—	—	—	—	—	—	—	21	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—	—	—	14	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	—	—	—	—

E. AUSTRALIA — N.W. U.S.A.										E. AUSTRALIA — N.W. U.S.A.															
0	2	4	6	8	10	12	14	16	18	20	22	24	0	2	4	6	8	10	12	14	16	18	20	22	24
45	—	—	—	—	—	—	—	—	—	—	—	—	45	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	—	—	—	—	25	—	—	—	—	—	—	—	—	—	—	—	—
21	—	—	—	—	—	—	—	—	—	—	—	—	21	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—	—	—	14	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	—	—	—	—

E. AUSTRALIA — N.E. U.S.A. S.E.										E. AUSTRALIA — N.E. U.S.A. L.N.															
0	2	4	6	8	10	12	14	16	18	20	22	24	0	2	4	6	8	10	12	14	16	18	20	22	24
45	—	—	—	—	—	—	—	—	—	—	—	—	45	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	—	—	—	—	25	—	—	—	—	—	—	—	—	—	—	—	—
21	—	—	—	—	—	—	—	—	—	—	—	—	21	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—	—	—	14	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	—	—	—	—

E. AUSTRALIA — CENTRAL AMERICA										W. AUSTRALIA — S. AFRICA															
0	2	4	6	8	10	12	14	16	18	20	22	24	0	2	4	6	8	10	12	14	16	18	20	22	24
45	—	—	—	—	—	—	—	—	—	—	—	—	45	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	—	—	—	—	25	—	—	—	—	—	—	—	—	—	—	—	—
21	—	—	—	—	—	—	—	—	—	—	—	—	21	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—	—	—	14	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	—	—	—	—

W. AUSTRALIA — W. EUROPE										W. AUSTRALIA — N.W. U.S.A.															
0	2	4	6	8	10	12	14	16	18	20	22	24	0	2	4	6	8	10	12	14	16	18	20	22	24
45	—	—	—	—	—	—	—	—	—	—	—	—	45	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	—	—	—	—	25	—	—	—	—	—	—	—	—	—	—	—	—
21	—	—	—	—	—	—	—	—	—	—	—	—	21	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—	—	—	14	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	—	—	—	—

W. AUSTRALIA — N.E. U.S.A.										W. AUSTRALIA — S. AFRICA															
0	2	4	6	8	10	12	14	16	18	20	22	24	0	2	4	6	8	10	12	14	16	18	20	22	24

VHF

Frank P. O'Dwyer, VK3OF
180 Thomas Street,
Hampshire, Vic.

Maybe the notes did raise last month. My apologies to those who forwarded theirs in time. The reason for lateness, the awaiting of further notes and a temporary breakdown of liaison between the printer and the v.h.f. Ed. The paucity of the notes this month reflects the lack of time available. That is not a reflection on the Divisional secretary, but it is on the v.h.f. operator who leaves it to the scribes to dig up their own information. [Copy date will be strictly adhered to in future.—Editor]

Details of highlights from the missing notes were the working of Mike by 4HD and 4NG, and 5MIDG breaking into a contact between 3EE and 6ZBZ, sign. 59. This is Jim's second contact with VK5. This 5MIDG fellow said that he is working into V86 on an average of three times per week. He would have to explain what type of propagation this is using. What about it boys? Jim is situated on the geometric equator; the distance is 1,800 miles; there is no T.E. flutter. He also works DU and JA, but infrequently. He also lists frequently towards VK around 1800 EAST his lunch time. His two break-throughs have been around this hour.

Then there was the smattering of JA DX and a couple of Es openings VK4/5 and VK5/7. Both were heard on their location frequencies but despite that fact local QRM has mixed it with JA. The arrival of 5ZEM in that area has increased the number of 50 Mc. stations by 100 per cent, so keep an eye on that direction in case the opportunity for W.A.S. comes along. DX during October was generally poor, JA signals showing great strength and not near as frequent as the time last year. Nov. got away to a good start, the third providing the best ever opening, VK5/JA from 1300 to 1700 all the way, sigs. booming in. Only a couple were worked by the Melb. gang representatives, the others on the air at the time, one of whom was successful.

A counter situation when the band did open was the decading of a well known Melb event held the first Tuesday of each Nov. Maybe all other ears were at the b.c. sets. Heard calling during the opening were VK2EES and VK5/7. No DX was heard on the air to their share. Es produced nothing that I know of, though Les 1XXM has been frequently hearing snatches of talk, apparently from VK4 around 1700-1800. Jack 3ZDG claims more use of the band than VK5 and morning sessions (around 0600) because the QRMs makes for ideal listening conditions. He partially proved the point by hearing VK5/3ZER portable at Mt. Lofty in VRS on 50 Mc. and 14 Mc. On Nov. 8 that Jack said that he had heard a lot of JA. The JA would have missed out T.V.I. between Interstate Channel 2 stations is already evident, bad enough to make newspaper items, as we are in for a good Es season.

To all the regular scribes and those others who have provided so many notes for this column throughout the year, my thanks, and to all those who write and those who read, the Season's Greetings, a Holy Christmas and a Successful New Year.

—Frank O'Dwyer, VK3OF.

50 MEGACYCLES

NEW SOUTH WALES

November 3, during what was apparently a general opening to JA, VK3ABC worked into JA4 and 2. Others of the gang were heard calling.

VICTORIA

30 Mc. activity has been at an average for local activity, but DX has been conspicuous by its absence. On a few occasions, odd signals have been heard, but nothing was worked, hope is still high, receivers are working overtime with beams turned towards DX localities.

Some new calls active for the Interstate gang to look for are: John 3ZJE, Neal 3ZNN and John 3ZJA. Old timer 3ACL at Red Hill

made a brief return to the band and is expected to be heard again frequently. Keith 3ZED is off to the Antarctic in 1960. He will be stationed at Davis, operating under the call of VK3ED. 50 Mc. gear will be in his kit and he hopes for some use, for the way down under. We wish you the best of luck, Keith, while down there. You will have to anchor things firmly down there in those gales, otherwise you will be chasing it all over the place. He said on Jan. 5 on the Magga Dan.

Part 3ZGD is back on the air after some "technical" trouble. He is building mobile for 6 and 3 mhz and hopes to operate portable from Eden early next year, so look out the ZLs.

Of interest to the 50 Mc. gang, on Nov. 1 a viewer at Hamilton (western Vic.) reported that ABQ2 replaced the picture from ABV2 for periods during the afternoon. SZGP (Melb.) found the signal from ABV1 was noticeably interfered with while listening with an RPSK converter.

Nov. 3, JAs were heard and worked in Melb. between 1400 and 1500, while next day 3ZEV portable at Alexandra (N.E. of Melb.) heard JA 2L during the afternoon. Nov. 5 more JAs were heard, and now where is the television station on approach? So far he had often around Melb., is located? SZGP has heard this station around quite often during the time of break throughs, it was heard again over the three days just mentioned.—SZGP.

EXTENDED USE OF 50-54 Mc. BAND

PURSUANT to a request from the W.I.A. for the continued use of the band 50-54 Mc., the Postmaster-General's Department has authorised the use of the band until 31 December, 1960, conditional upon relinquishment thereof by Amateur station licensees before that date upon fourteen days notice if the band is required by the Television Service.

QUEENSLAND

JA openings few and far between and very patchy. Best opening was on Oct. 10 from 1325 to 1425 with good strength sigs. JAs appeared to be heard all the afternoon together with 5ZEM, 5ZEV and 5ZEM from Townsville, also 5HLKA. Kept me down to serious listening at 1900, going QRT at 2303. JA still in. 5ZEM worked 3ZAK was active also during the dinner hour. The Brisbane gang were represented during the evening session by 4ZAK and 4ZBZ. JA districts 4, 1, 2, 4, 7 and 9 that day.

On the 18th, JA1 and 3 at lunch time, 5A/3, again at 1800-1830, 2000, JA1, 2, 4 and 6 from 1815 to 1900, JA1, 2, 4 and 6, 5ZEM, 5ZEV, 5ZBZ, but no JA, 5ZAK, 5HLKA, 7, 8, 4, and 6, 5HLKA and JA101GV from 1425 to 1805, peaking 5S. Heard no further DX until the 31st, when JASCE came up calling at 1250 and Mick 4ZAA worked him. 4ZBZ also was around. Thought he was JA101GV, but he was JA101GV another time, on the 20th at 1320; who was talking I wonder? Was it you, Hugh, 5 Beer Corks. Heard that Bob 4NG and Lance 4ZAZ were being mentioned in Dispatches. Also heard from 4ZAK and 4ZBZ, who was a XRA for about two minutes at 1800, 5A.

Welcome to 50 Mc., 4ZCH, at present up near IGY, QTH about 40 miles south-west of Brisbane. Running on battery power Mick 4ZAA appears to have cleaned up his t.v.i. and is based on 50 Mc. 4ZD must have migrated the JA 2L this month, not seen since then, does re-appear. Arthur 4ZBA had a P & S. mod. now so may get out much better when Es start again, if it starts. 4ZBY has a 5 el. beam on the job now I believe. Les 4ZZ has ideas of starting on 50 Mc., I hope so, Es.

Never hear 4ZBZ now, he has formulae for setting up that. Quite a bit of mobile activity up in the Brisbane area now. Alan 4ZBF talking about building a "3 water" for his new Minor by Xmas. Doug 4ZDL using hot 5V6 and quad. Max 4HD boxing up his 1007 now or is it the 3C150A, Max?—ZCH.

WESTERN AUSTRALIA

Conditions, on the whole, have been quiet this last three or four weeks except for two exceptionally good openings when the band

was open into JA for at least six hours. The last of these was on Nov. 3 when apparently all States had JA DX. JA could be heard calling VK3BC, VK3ZAX and many other stations.

At last I am sure I have a definite identification of that carrier "with hours on 'T' 48 Mc. and with the other carriers alongside. I now have no doubt at all that it is a Russian Television Channel on their Channel 2. Enquiries I have made confirm the following points:

(a) Frequency: 48 Mc.
(b) Beam direction is right—there are at least two v.t. stations in Siberia. The most distant (Novosibirsk) is about 20 degrees W. of N from Perth and about 6,000 miles way. The 48-54 Mc. spots appear to be about normal skin here. Tokyo is about 5,000 miles. JA is 5,000 miles. The distance, then, is right I have been unable to locate the second Siberian station, but I suspect it is near Vladivostok, a portmark of a v.t. station located in Vladivostok. Has been present in Tokyo.

Incidentally, checking through my log, I find I have logged the signal 54 times since March '58. That figure could be nearly doubled, however, since I have not logged the sig when it has been present during a steerable opening. Local activity on 50 Mc. remains at quite a high level. Mobile activity is increasing, with Frank 3BC joining in. 5ZBY is still an active country station only active one within 100 per cent. contact of Perth (70 miles). 5VG, 5ZBP, 5ZEM, 5ZAK and 6JG are all active on 50 Mc.—ZHE.

144 MEGACYCLES

TWO metre activity as heard from Ballarat has been quite high during October and estimates made from log book entries indicate an increase of over 100 per cent in the number of stations operating compared to a similar period last year. No outstanding DX has been worked, but many new callers and not so new comers in Melbourne have worked Ballarat stations for the first time. An interesting contact was made when Ron 3ZB and myself contacted Syd 3CI in Nagambie on Nov. 1. We were again on Nov. 2 when Syd worked five stations in the same area 3PO, 3SE, 3ZBS, 3ZER and 3ZEL. The Ballarat-Nagambie path had previously been regarded as very difficult but the signal levels indicated that this is not so. A series of steeds have been arranged to prove this point.

Syb. has made its appearance on 144 Mc. in Ballarat. Brian 3ZBS put on a signal on 1448 from his base exciter on Nov. 1. Much work remains to be done on the exciter. Brian does not expect to be working DX on 1448 a while yet. 3ZEL is still a few nights work behind with the s.b.b. exciter.

3ZEM/3ZKS steeds are continuing each night at the same time as the various W.I.A. broadcast during October. For some reason the times the steed starts at 1800 EAST when VK3 calls, 1825 VK6 calls, 1840 VK5 calls, 1845 VK4 calls. The same schedule applies each and every night. The change was made because it was felt that the work would be in the hood of achieving contact by Es reflection at this time and also because the earlier calls are more convenient to the more active participants at each end. There has been no positive identification of the steeds at either end, but about some VK3 and VK4 participation. These steeds result in existing records being broken and even if nothing occurs, they do stimulate increased activity which can do nothing but good.—ZEEJ.

QUEENSLAND

Seems as if Ron 4ZBZ has acquired a 5ZB, have you a rx also, Ron? 4ZBZ should have converter on by Xmas. Vic 4ZBT proposed SATV exciter final. Wonder if Bob 4NG got his converter on 8 mhz during his holidays?

WESTERN AUSTRALIA

Activity here is increasing with quite a few stations now operating. 4ZDS, 4ZD, 5VG, 5ZAV, 5ZBW, 6GB are all regulars. The daily 5BO/SBO/SWZ sked and VK3ZEE skeds will continue. One unidentified sig on about 144.5 was heard in VRS during the 3ZEL sked. It was heard in VRS enough and the station operates there as far as we know.

Fox hunts are still held each month, commencing from King's Park. Much fun is had by all.

—Continued on Page 34)

AUSTRALIA

XXZAD—P.O. Box 1280, Rangoon, Burma
 ED1PRA—A.P.O. Box 1280, Sierra Leone
 HFPIAC—Cam. P.O. Box 254, Panama City, Republic of Panama
 OAF—P.O. Box 230, Trujillo, Peru
 ZURH—H. Bittelhoff, 11 flat, N.A.T.O. Building, Floriana, Malta, G.C.
 RCIASL—P.O. Box 28, Moscow
 PZ2AA—C/o, Government Radio Station, Aruba, N.W.L.
 HVICN—Via WIBHS (for current s.s. operation)

FN8AD—P.O. Box 634, New Delhi, India
 ZD3F—Frank Buckley, C/o Cubic Wireless Ltd., Bathurst, Gambia (P.O. Box 265)
 PR7ZA—Louis Fernier, Boite Postale 330, St. Denis, Reunion Island
 PX1EX—QSL via R.E.F.

PV8BCV—P.O. Box 100, Box 182, Port Stanley, Falkland Island.

PX2KE—Is a pirate

AT2P—Via GM2I

AP5B—Now GM3H

PK6CS—Mr. George Cooper, C/o. Fed. Tel. and Tel. Co. Dept. of Govt. Net. N.G.

TG3RO—Aparicio Postal 355, Guatemala City, Guatemala

YAIAO—P.O. Box 4044, Frankfurt, Germany

VN1CI—P.O. Box 258, Managua, Nicaragua

WS8OC—P.M.T.A.F.—QSL via R.E.G.B. (ZQL and L261)

PJ3ME—B. S. Swedlow, Box 82, Blackwood, New Jersey, U.S.A. (2QSL)

EX-VK6KP—Peter King, C/o. O.T.C., Port Moresby (BERTSIS)

QSL RECEIVED

2AMB: CT8AL, KB5BB, OH1SY, MP4BBB,

VP8PE, VU2K, KAB1A, SDW, BVIA, FBXX,

HCIHL, HS1D, ITTIAL, JT1V, K2R, K2R, K2AD, K2-

SPK, ULTKMK, VP9CK, VP9BY, ZB8B, SM2FK,

SM2OE, 2QL, K2C1FMV, J2MHA, LA2JE P,

TIWD, TICW, VQ5EK, VQ5CQ, VSPBM, KW-

SAL, ZB1E, HK4AK, TI2W, VQ2JN, ZQ8R, VQ4-

1M, CN6DJ, DU1UR, FKAU, KM6BL, OD5LN,

VQ8CB, VU9KO, VK6KP, VQ2EW, VQ4FO,

VQ8AB, 4X4II, SM2GF, JA2ACT/MM, TAQ:

DL4AS, QSPH, VE1BWY, VE1OL, VE1ZM,

VK4AD, YV8AB, etc.

To the kind Don Chesser, VK4WIK, for the

use of his DX magazine, via SQL, in compiling

these notes. JAMES, thanks for the last Laurie

BOW, it is good to hear from you again Gordon,

and pleased to know four in the list are

now countries. Frank, SAOM, found DX

as appreciated. Frank, SAOM, found DX

pretty scarce from his location; partly due to

excessive static, and partly to Aurora phenom-

enon on the other hand he has heard quite

a deal of good DX being worked by other DX-

ers, so I would suggest better that he could

"Suggestion" to these latter Why don't you

send in your DX lists to A.R.T. George had

QSLs of interest from VE8DD and VE8DX, who

are connected with the "Downline" station on

the Beaumaris, in the extreme south east of

Victoria. The address for these stations is:

C/o. Federal Electric Corp., P.O. Box 2330,

Edmonton, Alberta, Canada.

To ZBM, good to know you have made a

comeback after so long. Bruce, VE3B, is

still active since 1946. He was known

for his set of eleven 540 ft long wave beams

133 W/L on 20 for all bands in all directions.

Notes on your activities will be appreciated

400, that new quad seems to be doing a good

job on the 21 Mc band. Hope you will

be interested in my entry in the VK/ZL Contest.

Barney, LA4B6, best luck with your exams.

Ian, and f.g. getting those five new countries.

TAQ? Bud says, "Time was taken up looking

after broadcasts from Parliament House at

Grenada. He has been in touch with me.

SYD: Your activities on the poor old 5

band should make some of the DX boys

sit up and take notice. Your list of seventeen

stations worked from Africa certainly brings

you back in the top 100.

Albury, 2W1W, before the war and did the Southern Cross.

Notes Will be looking for your notes next

month, Reg.

ERS-188 Eric heard 2G1BQ and LASAD/F

this month to confirm his total up to 247 emis-

sions with 180 confirmed. He has had QSLs

from 105 countries so far.

Gives some must answer s.w.l. reports. ISWL/G-1176.

Thanks for the first information received

directly from England. Roger has a QSL score of

117 countries in 86 countries so far, but can

expect to increase this to 200 and record VK0ZK,

ZB, ZR, ZL3GU and 4AW.

Best of luck with Zones 29 and 30.

SHW: Thanks Ray for the

activities of yourself and SHW Hope SWP

will be active again soon so that he finds the

new QSL card.

SHW: I am sure he will be included in next month's issue.

TS, cousin next month.

CORRESPONDENCE

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

AUSTRALIAN DXCC AWARD

C/o. Dept. of inland Revenue,
 Johore Bahru, Johore,
 Federation of Malaya

Editor "A.R." Dear Sir.

Your Awards Manager's letter on the Australian DXCC Award, published in the June 1959 issue of your magazine is a most interesting expression of views interesting from the point of view of the DXer. I am sure it is very largely a case of "the kettle calling the pot black".

I cannot really appreciate the use of such references as "glaring idiosyncrasies" — "stilted nonsense" — "sheer nonsense" etc. Such expressions, genuine or otherwise, are not in keeping with the so-called Ham spirit. The Editor, on the other hand, the object of the letter was to cause friction between the W.I.A. and the A.R.R.L. As far as I am aware, the individuals concerned in the A.R.R.L. Awards section are only Radio Amateurs and not Professors of Geography.

With regard to the use of VK1XU's statements, may I comment as follows:

1. The Gold Coast was a Crown Colony prior to obtaining independence. (This is not intended to suggest that I agree with the A.R.R.L. decision.)

2. Nine-elevenths of the Federation of Malaya were Protectorate prior to obtaining independence.

3. Singapore has only been granted partial self-government.

4. As far as Sarawak is concerned, I presume your writer is referring to some complications which took place during 1945 when the Japanese invaded the land of the "Rising Sun". As far as I can ascertain, there has been very little political development in Sarawak since then.

As one Ham Editor to another, why don't you use a blue pencil occasionally?

—S. Faulkner.

Hon. Secretary, M.A.R.T.S.

As evidenced by the publication of your letter in full, I believe in the democratic right of an individual to express his opinion.—Editor.]

V.H.F. CENTURY AWARD

Editor "A.R." Dear Sir.

Scanning this month's F.E. Notes, while awaiting the commencement of my favourite TV programme, I noted that that erstwhile worthy project, the V.H.F. Century Award, has been mentioned publicly for the first time.

News of its inauguration was told to a v.h.f. meeting by a Federal Councillor late in 1958.

and a few of us who were interested resolved to try and collect the necessary 100 QSL cards.

Several hundred hours later, having listened politely to long discourses on the weather, house painting, auntie's illness, the delinquencies of the young, the availability of novelties and autographs, I found that I was deeply impressed by the fundamental fact that the VK2 QSL rate barely exceeds 50 per cent. Seven years later, for about 180 different 1 metre stations worked, I don't possess 100 QSL cards — perhaps I am now deeply concerned that I even will.

In 1953 my plea for the acceptance of a "letter of acknowledgment of contact" in lieu of a card, having failed to impress an apathetic V.H.F. Committee, I sent a copy to State communications bearers, was directed to F.E. Committee, a thick file of correspondence with that body and was winning the one-man battle, until F.E. produced a fresh team of heroes and I retired exhausted and disillusioned.

The problem of design and finance of the award has been well handled by the committee. I am sure, had the fact been made public. At that time I had access to an art-of-work artist, who would have been pleased to accept the contract for the price of a couple of meals. Pending the arrival of such a certificate, the individuals should have been encouraged to go ahead and get their 100 contacts and have been awarded a temporary acknowledgement for so doing.

Most of the v.h.f. pioneers have gone to meet their maker, photography, however, just goes on.

To work 100 stations nowadays is not great achievement. For 3 metres you just set up gear in Melbourne or Sydney; for 6 metres you go to VK4 and work JAs.

The really fascinating pastime in v.h.f. is to try and get that elusive 6 metres W.A.R. award. It being entirely dependent upon the inclination of someone to go to N.T.

—H. A. F. Rose, VK3HE.

CONTEST RULES

Editor "A.R." Dear Sir.

I don't know what the Federal Contest Committee are doing, as up to now we don't know when the Ross Hall Contest is to be held and where it is to be held. I am not involved in the Contest. If we know earlier than this, as in other years, we can then arrange our holidays so as to make part, but this year we don't know when or the rules for the Contest. Also I understand the Federal Committee in July, but was told that it was too late to make alterations to the Contest. That was over four months ago. How long do they need to make rules and print them?

—A. H. Rusby, VK3ABR.

Unfortunately, the Chairman of the Federal Contest Committee refers to a serious illness recently, and another member had to go to New Zealand on business for two months. Under the circumstances, I think we can show the delay — Editor!



VACUUM MOUNTED CRYSTALS

for general communication frequencies in the range 3-14 Mc. Higher frequencies can be supplied.

THE FOLLOWING FISHING-CRAFT FREQUENCIES ARE AVAILABLE IN FT243 HOLDERS, 6280, 4095, 4535, 2760, 2524.

5.500 Ke. T.V. Sweep Generator Crystals, £3/12/6.

ALSO AMATEUR TYPE CRYSTALS—3.5 AND 7 Mc. BAND.

Commercial—0.62% £3/12/6. 0.91% £3/15/6. plus 12½% Sales Tax.
Amateur—from £3 each, plus 12½% Sales Tax.

Registars £1/10/-.

CRYSTALS FOR TAXI AND BUSH FIRE SETS ALSO AVAILABLE.

We would be happy to advise and quote you as to the most suitable crystal for your particular application, either in the pressure or vacuum type holder.

New Zealand Representatives: Messrs. Carrel & Carrel, Box 2102, Auckland.

BRIGHT STAR RADIO

46 Eastgate Street, Oakleigh, S.E.12, Vic.

Phone: 57-6387

VK4TC AT TOWNSVILLE INDUSTRIES FAIR

On 17th, 18th, and 19th September the Townsville boys ran an Amateur Station under the call sign of VK4TC. As will be seen by the accompanying photograph it was well laid out and pleasing to the artistic eye of the President of the Townsville Amateur Radio Club, VK4PS.

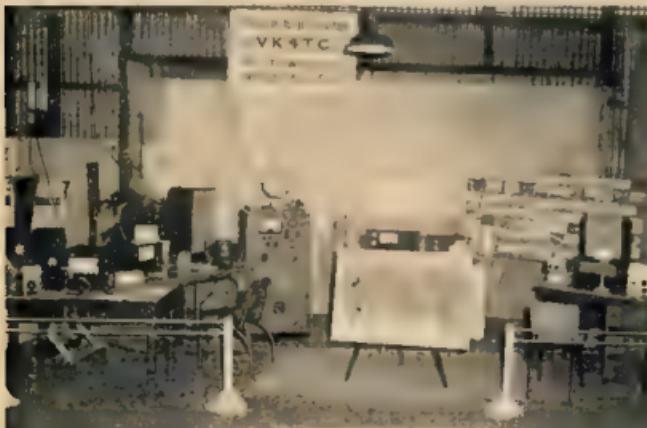
Pride of place was given to the T.A.R.C. call sign, VK4TC. On the back wall were maps of all parts of the world in great detail, while in the centre foreground a map of the world sported flags of countries worked when the photograph was taken.

trial gadgets which were not suppressed. Never fear, chaps, all who were worked will receive a QSL card depicting the station, I hope, donated by VK4EJ.

The assistance given by people outside the club was greatly appreciated. While to the very few of the boys who did the yeoman work, I say "many thanks."

This is the first time we have organised an exhibition and the experience gained will be of great assistance for the future exhibitions.

-R. W. Wilson, VK4RW.



The station on the right was on 50 Mc., exhibited and manned by VK4ZBE. In the background were QSL cards of over 100 countries.

The table on the left had a very nice home-brew receiver, etc., built by VK4DD, together with books appertaining to Amateur Radio.

The next was a complete station of VK4PS and manned by various operators, and in the centre at the back was a table of various home-made equipment lent by the boys for this great occasion.

Unfortunately there is no photograph of the aerial systems used. These were as follows: VK4PS home-brew G4ZU on top of VK4BQ's new tower, 45 ft., also 4 element for 144 Mc. link with VK4MF and 30 ft. water pipe sported the 4 element yagi from VK4RW. A dipole was used on 7 Mc.

We were sorry to disappoint the 7 Mc. boys as we experienced very bad t.v.i. on the "closed" circuit t.v. run and demonstrated by A.W.A. Quite a number of contacts were made and a larger number not worked—although we were called—due to the extra high noise level from various stands in the proximity demonstrating elec-

V H F

(Continued from Page 21)

288 Mr. DEG still possesses his t.v. camera, the tx works and signs have been sent out. GFM is threatening to build a 150W 288 Mc. tx using a 4CX150A. Several shaps have s.t.v. controlled gear on 288, but activity is low at present.

T.V.: Channel 7 appears to be giving pretty fair coverage and several VK6s are spending their evenings watching the local news, of course. B2BY is a regular "looker" 6ZBQ, B2BA, B2BD and GCL all are interested.

At last! Our first case of t.v.i. Ron's (67M) neighbour reports t.v.i. Doesn't appear to be serious, however. What will you do to Channel 2, Ron?—GKE

A.T.V. AND T.V.I.

Len SZGP has been wrestling with some t.v.i., but appears to have cleaned the trouble up, at least to the best of my knowledge. He found one piece of trouble happening often enough worth passing on. Those concentric air trimmers, 1/30 pF variety. If you contemplate using these, make sure when installing that the ceramic pillar supporting the rotor area is not coated with aluminum paint or off-white paint of the rotor. See you before to nothing that your drive problems could be traced to this unit. Three recent events resulting in low drive and poor results were removed in one case by painting new units, and others by fitting a normal trimmer capacitor. It is worth trying. The constant screwing in and out of the rotors steadily leaves a deposit of aluminum on the ceramic pillar. Wonder why I got a dead short across one earlier.

GENERAL NEWS

Victoria.—The October V.h.f. Group meeting was well attended and those present heard an interesting talk on the use of the 3D scanner. A.A. Stevens T.V. Group. General information on Amateur T.V. and a discussion on a simple scanner for reproducing images or a car utilising a photo electric cell in a simple flying spot scanner. Further tapes are available on more advanced equipment which could be played for those interested. We were indebted to Charlie SAAK for the tapes. The recent 8 mx scramble took place on Oct. 25 with some 28 stations participating. John 3ZFO took the honour in this event with 19 stations worked. Quite a successful evening.

Cheers for all in VK6. Christmas Greetings to all the v.h.f. gang in other States from all the v.h.f. gang in VK3. Likewise from self.—SZGP.

*May all your
Christmases be Bright*
IRONCORE TRANSFORMERS PTY. LTD.
MAKERS OF
QUALITY TRANSFORMERS

HIGSON LANE, MELBOURNE, C.1

Phone: 63-4771

FEDERAL

Fed. President: G. M. Hull, VK3ZS
Fed. Assist. Secretary: W. Mitchell, VK3JUM.
 Box 2811W, G.P.O., Melbourne, C.I. Vic.

Federal Councilors:
 New South Wales—Bob Geddes, VK2ARG
 Victoria—Alfred Elliott, VK3AJR
 Queensland—Arthur Walz, VK3AW
 South Australia—Rich Richards, VK3DO
 Western Australia—Ron Hugo, VK3EW
 Tasmania—E. J. Cruise, VK3ET
 Papua-New Guinea—Kun Coleson, VK3KK

Postmaster-General Committee: Alex Hubbard, VK7AZ Manager, Box 371B, Hobart, Tas.
 QSL Bureau: R. E. Jones, VK3RJ, 23 Landale Street, Box H31, K.L.I., Vic.
 Awards Manager: A. G. Weyton, VK3KU, 8 York Street, Bonbeach, Vic.

NEW SOUTH WALES

President: Dave Duff, VK2ZQ
Secretary: Noel Beard, VK3ALJ, Box 1734,
 G.P.O. Sydney.

Meeting Night: Fourth Friday of each month at
 Service House, Gloucester Street, Sydney

QSL Bureau: Box 1734, G.P.O., Sydney Frank Smith, Manager, assisted by Alan Smith, VK3AAR.

Zone Correspondents: North Coast and Tablelands—Noel Hanson, VK2AHM, Ryans Ave., West Kempsey; Hunter Branch—R. W. Rose, VK2ARL, 18 Bruxton St., Wallsend; Goulburn and Lakes—H. J. Hawking, 2YL, 9 Comfort Av., Cessnock; Westerns—W. Stitt, VK2KJ, "Cambridge," Forbes, South Coast & Southwesterns—E. Fisher, VK2DY, 2 Oxley St., Warrawong; B.H. Westerns—J. W. S. Edge, VK3AJO, 100 St. Cooleson, Tamworth; S. Smith, VK3APB, 39 Upper St., Tamworth.

VICTORIA

President: D. A. Wardlaw, VK3ADW.
Secretary: J. R. Lancaster, VK3JL.

FEDERAL

EXTENDED USE OF 58-54 Mc. BAND

Pursuant to a request from the W.L.A. for the continued use of the band 58-54 Mc. for the transmission of General's "Decree" which authorized the use of the band until 31st December, 1960, conditional upon relinquishment thereof by Amateur station licensees before that date upon fourteen days' notice if the band is required by the Television Service.

AMENDMENTS TO FEDERAL CONSTITUTION

The undermentioned amendments to the Federal Constitution have been agreed to and are published for information of all concerned.

Clause Amendment

21. That the word after "two" in the fifth line, the word "fifth," be deleted.
- 41a. That after the word "is" in the first line, the word "financial" be deleted and the word "fiscal" be inserted in lieu thereof.
52. That all after the word "additional" in the second last line be deleted and the following words inserted in lieu thereof:
 "to any deliberative voice he may have on behalf of his Division."
55. After the word "decisions" in the seventh line, the words "within two months of the conclusion of the Federal Convention" be deleted.
72. That after the word "Divisions" in the first line the word "voting" be deleted and all after the word "carried" in the second line be deleted.

CONTEST CALENDAR

Compiled by W.L.A. Fed. Contests Comm.



ROSS HULL MEMORIAL V.H.F. CONTEST:

Date: 0600 hours E.A.S.T. 1st Dec., 1960,
 to 2359 hours E.A.S.T., 31st Jan.
 1961.

Rules: Elsewhere this issue.

NATIONAL FIELD DAY:

Proposed Date: 1600 hours E.A.S.T. Saturday, 13th Feb., '60, to 1800 hours E.A.S.T., Sunday, 14th Feb., '60.

Rules: To be published next issue.

NOTES

Administrative Secretary: Mrs. May, 478 Victoria Parade, East Melbourne, C.I. Postal address: P.O. Box 26, East Melbourne, C.I. **Meeting Night:** First Wednesday of each month at the Radio School, Royal Melbourne Technical College.

QSL Bureau: Inwards and Outwards—W.I.A., Vic. Div., P.O. Box 53, East Melbourne, C.I. **Zone Correspondents:** Western: W. J. Kinsella, VK3AKW, Mandala, Lubbecke; South-Western: W. W. Williams, 120 Cawarra St., Werribee; North-Western: M. Folts, VK3GZ, 101 Lonsdale Ave., Mildura; Midland: R. Jonasson, VK3ND, Farnsworth St., Castlemaine; North-Eastern: T. K. Tennant, Park St., Tatura; Eastern: W. G. Francis, VK3ZCO, 30 Windsor Ave., Moel.

QUEENSLAND
President: John Pickles, VK4PP
Secretary: W. J. Rafter, VK4PR, Box 683J, G.P.O. Brisbane.

Meeting Night: Fourth Friday in each month at the State Service Union Rooms, Elizabeth Street, Brisbane.

Divisional Sub-Editor: D. B. Hughes, VK4ZBD, 6 Mayne Rd., Bowen Hills, Brisbane.

QSL Bureau: Jack Files, VK4PJ, Vanda St., Burpengary.

Zone Correspondent: Maryborough—R. J. Glassop, VK4BG, 50 North St., Maryborough; Townsville—R. K. Wilson, VK4RW, Megana St., Stuart, Townsville.

U.S.S.R. CONTEST REPORT
 On 14th and 15th March, 1960, the Central Amateur Radio Club of the U.S.S.R. conducted a Contest to celebrate the 100th birthday anniversary of the great Russian scientist, A. S. Popov, whom the Russians claim, to be the inventor of radio.

Forty-eight countries took part in the contest and logs were received from twenty-three countries as follows—

Country	Total Stations	Labs taking part	Received
U.S.S.R.	29	11	11
Poland	245	11	11
East Germany	27	13	13
German People's Repub.	26	4	4
Austria	16	4	4
Denmark	7	3	3
Switzerland	9	4	4
Japan	14	1	1
Finland	11	3	3
Australia	5	2	2
Yugoslavia	12	2	2
France	27	2	2
New Zealand	5	1	1
U.S.A.	126	1	1
United Kingdom	26	1	1
Columbia	4	1	1
Brazil	14	1	1
Czechoslovakia	6	2	2
Panama Canal Zone	8	1	1
Liberia	3	1	1
Italy	43	2	2
Cuba	3	1	1
	745	126	126

Results of the distribution of points places United Kingdom first with a total of 201 contacts for a total of 520 points, and Australia second with 223 contacts for a total of 463 points. The two Australian stations which submitted logs were VK3NO and VK2OV.

AMATEUR OPERATORS' CERTIFICATES OF PROFICIENCY

Following is a list showing the names and addresses of persons who qualified at the examination held on 14th July, 1960, for either the Amateur Operator's Certificate of Proficiency or the Amateur Operator's Limited Certificate of Proficiency (designated by an asterisk).

It should be noted that the list does not include the names of persons who failed to qualify for a full certificate but passed in the subjects for the limited certificate.

New South Wales
 P. E. Barry, 22 High Street, Cessnock.
 G. F. Morris, 27 Hill Street, Gledhill.

SOUTH AUSTRALIA

President: B. W. Austin, VK3AC, Box 1234K, G.P.O., Adelaide. Telephone, M 7851. **Meeting Night:** Second Tuesday of each month at 17 Waymouth St., Adelaide. **Divisional Sub-Editor:** Mr. W. Parsons, VK3PS, 10 Victoria Ave., Rose Park, S.A. **QSL Bureau:** G. Luxton, VK3KSY, 27 Belair Rd., West Mitcham, S.A. (Inwards & Outwards).

WESTERN AUSTRALIA

President: L. Roeger, VK3ER. **Secretary:** Mr. S. E. Eddington, VK3EL, Box N1002, G.P.O., Perth. **Meeting Night:** Third Tuesday of month at Perth Tech College Annex, Mount Bay Rd. **Divisional Sub-Editor:** C. E. J. Sangster, VK3CIS, Windsor Hotel, South Perth. **QSL Bureau:** Jim Rumball, VK3SHU, Box F130, G.P.O., Perth, W.A. (Inwards and Outwards).

TAIRANIA

President: Mr. L. R. Jensen, VK3LJ. **Secretary:** K. E. Millin, VK3KA, Box 371B, G.P.O., Hobart. **Meeting Night:** First Wednesday of each month at W.I.A. Clubroom, 147 Liverpool St. Hobart. **Divisional Sub-Editor:** I. Nichols, VK3TJZ, 8 Queen St., Hobart. **QSL Bureau:** J. Baileigh, VK3JR, 8 Willowdene Ave., Lower Sandy Bay, Hobart. **Zone Correspondent:** North Western Zone—Terry Towns, VK3TT. Northern Zone—Ray Waldon.

PAPUA—NEW GUINEA

President: Roy Brown, VK3RS. **Secretary:** Roy Brown, VK3AU, P.O. Box 304, Port Moresby. **Meeting Night:** Last Wednesday in each month, R.S.L. Reading Room, Ela Beach, P. Moresby. **QSL Bureau:** G/o, P.O. Box 304, Port Moresby.

A. G. Mition, "Tabor," Pinelands Rd., Grenfell. D. F. Evans, Ambulance Station, Gundagai. *J. S. R. Maher, 43 Matindie St., West Wyalong. *R. J. Bleasley, 807 New Canterbury Rd., Hurstville Park. *W. J. G. Morris, 29 Warrington Ave., St. Ives. *A. C. Madden, 517 Peadius Highway, Killarny. *N. A. Michie, 19 Coronation Ave., Roseville. *A. W. Sullivan, 49 Grantham St., Carlton. S. E. Handcock, 15 Tedman Parade, Sylvania. D. W. L. Edwards, 21 Oswin Street, East Kew, K.E. *P. G. Arthur, 27 Studley Street, Strathfield. *W. J. Hart, 14/1, 4/43 Mountain St., Mosman. *D. R. Woodward, 17 Brookings Ave., Mosman. *W. J. Melville, 34 Travers St., Wagga Wagga.

Victoria

C. K. Blake, Box 182, Hopetoun. B. S. Bauch, "Murraza," Hawksdale. *J. D. Anwin, 3 May Street, Deepdene, E.S. *H. Baker, 1 Adam Street, Bentleigh. J. N. Bradshaw, 31 Summerhill Rd., East Preston. *S. E. B. Burchell, R.A.A.F., "Froggall," Canterbury, E.S. *K. F. Colly, 14 Lincoln Avenue, Oakleigh. *P. W. Durston, 8 Dunbar Avenue, Sunshine. *J. R. Edwards, 21 Oswin Street, East Kew, K.E. *N. L. Jones, 18 Rangeview Grove, North Balwyn, E.S. *P. J. Carwardine, 26 Nepean Highway, Elsternwick, E.S. *G. F. Scott, 22 Eastview Cres., East Bentleigh, S.E. 13. *D. R. Street, H.A.A.F., "Froggall," Canterbury, E.S. *H. A. Thacher, "No-Ray-Al," Sandells Rd., Tecoma. *K. R. Webster, 68 Mountain View Rd., Rosslea. *W. H. Evans, 1 Mall's Ave., Herne Hill, Glenelg. *R. S. Hernan, 51 Lancelyn Street, Coburg. *D. A. Stewart, 2 Lansdowne St., East Melbourne. *R. C. T. Walker, 56 Vincent St., Sandringham, S.E. *R. M. Kidgell, 302 Waverley Rd., Mt. Waverley, V.H. Richardson, 76 Devon Rd., Fawkner Vale, W.E.

SILENT KEY

It is with deep regret that we record the passing of:-

VK2AHL—"Pop" Lewis.



A Very Merry Xmas and a Happy New Year to all!

Q-PLUS 14" 110° T.V. KIT

Complete with all Valves including Picture Tube, Speaker, Cabinet, Safety Glass, and Easy-to-Follow Instruction Manual

NOTE THESE FEATURES:

- ★ "Q-PLUS" TURRET TUNER FEATURING 10 CHANNELS, PRE-WIRED, TESTED AND ALIGNED, WITH EASILY ADAPTABLE LOW-IMPEDANCE LINK OUTPUT.
- ★ "Q-PLUS" MARK V. VIDEO I.F. STRIP COMPLETELY WIRED, TESTED, ALIGNED AND FACTORY SEALED FOR OPTIMUM PERFORMANCE.
- ★ FULLY RATED AND SCREENED POWER TRANSFORMER, USING SILICON DIODE RECTIFIERS (NO "HOT" CHASSIS).
- ★ FULL QUERY SERVICE AVAILABLE AT ALL TIMES.
- ★ ONLY HIGHEST QUALITY COMPONENTS USED.
- ★ INCORPORATING LATEST CIRCUIT DESIGNS, GIVING FULL PERFORMANCE WITH 14 VALVES AND 2 GERMANIUM DIODES.
- ★ THIS KIT IS SUITABLE FOR CONSTRUCTION AS A 17 INCH MODEL WITH SMALL CIRCUIT MODIFICATIONS.



- ★ CHOICE OF CABINET COVERING IN SPECIALLY SELECTED TAN OR BLUE P.V.C. FABRICS.

99 G.N.S. COMPLETE

- ★ THIS KIT IS SUITABLE FOR CONSTRUCTION AS A 17 INCH MODEL WITH SMALL CIRCUIT MODIFICATIONS.

INCREASED PRODUCTION BY POPULAR DEMAND MAKES THIS KIT NOW AVAILABLE FROM YOUR WHOLESALER READY FOR XMAS CONSTRUCTION

R. W. STEANE & CO. PTY. LTD.

Head Office and Factory: MELBOURNE—2A MONTROSE STREET, HAWTHORN, E.3. WB 3377-8-9.

Branch Office: SYDNEY—8 CADOW STREET, PYMBLE. JX 3556.

Agents: Adelaide:
Wm. T. Matthew Ltd., W 7021

Brisbane:
Keith Percy & Co. P/L., 2-1757

Perth:
H. J. McQuillan P/L., BA 8911

A. E. Tobin, 12 Hollamoor Rd., Burwood, E.13.
 J. M. McDonnell, 7 East Como Pde., Mentone, S.11.
 A. J. Smith, 14 Airlie Avenue, Armadale.
 H. A. MacLachlan, 591 Heatherston Rd., Dandenong.
 N. D. Bailey, R.A.A.F., "Frogmaw," Canterbury, E.7.
 P. A. Elton, 21 Wentworth Ave., Canterbury, E.7.

* Not 18 years of age till 28th April, 1950.

Queensland

C. C. Dunn, 88 Bell Street, Biloela.
 R. D. Silver, 36 Jack St., Redton, Brisbane.
 D. B. Hughes, 55 Mayne Rd., Bowen Hills, Brisbane.

South Australia

W. L. Crawford, Box 147, Narracoorte.

L. Goldfinch, 638 Seaview Rd., Grange.

A. W. Anderson, 272 Fullarton Rd., Netherby, Milnethorpe.

R. J. Shuker, 7 Devon Ave., Rosebery.

C. J. McRae, 18 Short Road, Elizabeth,
 H. M. Bea, 12 Dean Grove, Maylands, Perth.

W. R. Edwards, C.P.O. Post Office, Alice Springs.

Western Australia

C. T. Power, Box 377, P.O. Geraldton.

G. W. Cattach, South Western Highway, Yarloop.

* F. J. Lane, 72 Guildford Rd., Mt. Lawley.

Tasmania

J. H. Schurings, Kingston Beach.

NEW SOUTH WALES

The monthly general meeting of the N.S.W. Division was held on Friday, 23rd October, at Science House, Gloucester St., Sydney, where each fourth Friday of the month such a meeting is held, in which we consider visitors and members who may be visiting Sydney. This month the meeting was a very special affair and took the form of an "Old Timers' Night," which was very well attended by some 35 old timers and members. An old timer by the way is one who has had his license in excess of 25 years.

The meeting was opened by the Divisional President, Dave ZEO at 7.45 p.m. who welcomed the gathering, which included visitors, ZLSAWM and VK3CX.

There then called Bill 2HZ, a Fast Federal Old Timer, to take the chair and introduce the Old Timers. These included Mr. and Mrs. Wal Hannan (SAKXH), one of the founders of this Division; Jack Pike (JJP), possibly one of the most active among the more elderly Amateurs; Basil Cooke, and Joe Reed (JRE) recently recovered from a long illness which had hindered his activities; and another active in the Amateur field. All speakers spoke of their activities of the past at a time when this Division had a total membership of some 14 members, who laid the solid foundation on which this Division stands today. A remarkable amount of gear, some dating back to the early Twentieth Century, was displayed to the interest of the members, and the boys described the manner in which this gear was used, notably one of the most interesting of the gear was a magnetic detector which Jack ZJP constructed in 1910.

Bill Moore then handed the chair to Lionel Swain 2CB, another Old Timer of some 30 odd years Amateur life, who produced his original permit to operate on the, then, short wave bands, and after 40 minutes Lionel stepped at length with early activities in Newcastle, and as with all other speakers, spoke of the fatherly advice given to all young squirts of those days by our late friend and fellow Amateur, Charles MacLurcan (CKM), who passed away some ten years ago, and whom we lost at this day from the operating position at the Divisional station at 2WL. Lionel introduced others in the person of Herrie Lapthorne (2HL), Ted Barlow (2QZ), who made the first phone contact with VK3AW, Alan Gray (2AB), and finally our old friend, Lionel (2LG). All spoke of the great strides made in Amateur Radio over the years, but echoed Lionel's words that we must of necessity progress in our transmission methods to enable us to compete in bands which may be reduced in size to enable us to pursue our hobby to its fullest extent.

Dave ZEO then resumed the chair and conducted the business side of the monthly meeting. Following the reading of the minutes of the previous meeting, 14 new members were admitted to the Division. The main business of the meeting was the discussion on a proposal for the Division to acquire office premises adjacent to the city which will prove to be an asset to the Division, and will provide a meeting place for all members, to enable

many of the smaller meetings to be held there and to house the Library and other facilities for members. Among those who spoke on the proposition were VK3E, 2AGW, 2AGH and VK3, who all stressed the importance of an investment by the Division. A motion was passed authorizing the Council to proceed with the matter as soon as suitable premises are found.

The meeting closed at 10.30 p.m. and all adjourned for coffee and the rags which was to be expected on such an occasion, and it was evident that many old associations and friendships were being renewed.

The Sunday broadcast on 25/10/50 was conducted by George ZEB and was commenced with an excellent rally from Lawson in the Blue Mountains, followed by a report of the Blue Mountains Section Convention. Many ZOT entered the broadcast by reading from a Sydney newspaper of 23rd March, 1910, which reported a meeting of Amateurs who formed an association which had been known as the Institute. With this and other information, George can lay the claim to being the first Amateur organization to be formed in the world, and one which will be 80 years of age in the coming months.

The Divisional Convention, to be held at the home of 2WL, Quarry Road, Dural, on 30/11/50, will emphasize our 50 years of age, and will be organized as a County Fair. It will be a full day of interest for all with plenty of exhibits, excellent displays of gear for enthusiasts in v.h.f., i.c.t., a.m. group, s.s.b. and transistorized gear. An excellent evening show is being arranged with further interesting prizes including a treasure chest, and a non-stop form of entertainment will be provided throughout the day, commencing at 2 p.m., when the Convention will officially open by the Divisional President. Registration will commence at 1 p.m., bring your picnic hamper, tea, hot water, etc., will only bring some of the good things on the free list. Registration will be inexpensive, so bring your wives, girl friends, kiddies and all your relatives to make the day a bumper success amid pleasant surroundings.

Slow Morse transmissions are conducted by a panel of operators each night of the week on 25/10, 26/10, & 27/10. These transmissions, under the call sign 2AWI are extremely valuable to those who are endeavouring to get their A.O.C.P. in the future. Our thanks go to the operators who are doing such sterling service to many a scheme possible. We would like to hear from all participants and their views on the matter and would be pleased to receive any suggestions to improve the service.

We have noticed recently that some of the many clubs in the State are not replying to the call-back to clubs following the broadcast. This is regrettable, because your scribe requests that the information you could give us to include in these notes is most valuable and gives YOUR club that publicity which is the life blood of any new organisation. So, we suggest that your activities be relayed to us and we shall be glad to demonstrate the value of all listening, and giving the club members do so regularly, that your clubs are visible bodies assisting Amateur Radio by providing a regular meeting place for fellows to get to know one another. This exchange of ideas and feature of all is the most valuable feature of our hobby.

The Albury Club recently held an Open Night where visitors brought along their parents and friends to see the progress made in a very new club. Albury consists of a sizeable amount of young fellows who are being indoctrinated by several older Amateurs to A.O.C.P. through means of the V.H.F. Correspondence Course, and although in temporary recess owing to the present school exams, is making excellent progress and will, we feel sure, produce many new calls in the near future. Practical work for these students is provided by the construction of the club's equipment.

BLUE MOUNTAINS SECTION CONVENTION

The Blue Mountains Section Convention was held at Lawson on 25th October in the lovely setting of the Old Hotel, Lawson. Despite the element weather, which had been experienced in the district in the previous days, the day was very fine and warm. Fifty registrations were made, including many who made the trip to the mountains from Sydney and other parts.

The Committee organised a Convention which was an unqualified success and augurs well for the future activities of the Section. A number of competitions were held during the day and the lucky prize winners were as follows:

OBITUARY

ALBERT W. ("POP") LEWIS, VK3AHL

With great sorrow I have to record the passing of Pop Lewis, VK3AHL on November 1, 1950, at the age of 82 years.

On the 25th January, 1957, Pop (he was never called anything else) came on the air for the first time with an ATS-AM transmitter and antenna. He was the first amateur to be heard in the state, the honour of being his first contact. Until four months ago, he was extremely active, having many thousands of contacts on 40. I doubt if there is a VK5 on that band where he has not worked him. It is only his limited hearing that has prevented him from making more contacts from afar although several times he worked ZL and VK. Unfortunately, Pop was not in good health, trouble dating back to World War I, of which the pain he suffered was unbearable, but he took it in his stride and was soon back talking to his friends.

Four months ago Pop was warned by his Doctor to stay off the air on every day he would just listen in to the "Goat Show" of which he was a member. On 26th July he broke into the group saying he was still not the best—that was my 1,320th and last contact with him.



For many years he worked for the Metropolitan Water Board and not long after he resigned from there he unfortunately lost his eyesight due to a cataract operation. Receiving little social contact and except towards his wife and interests, and except towards the end, he had exceptional memory—in fact there were quite a few that did not know of his affliction nor the fact that he was also deaf in one ear, and suffered from arthritis.

The Buncrana of Esperance, as he called himself, was always willing to give his blessing and friendly advice and as one of the official arm twisters, he plugged the L.T.U. fund every time he came on. One slogan I recall was, "Don't be a kid, give a Quid."

Sponsored and helped by the following: ZABE, 2FC, 2FD, FVC, 2EGC and ZABZ. Pop put out an excellent signal. Hearing him personally on several occasions I was struck by his quiet demeanour, excellent spirits and sense of humour. Eddie, his XYL, gave him great support and encouragement and attended to his QSLing.

Pop is survived by Eddie, his parents, and six children: Keith, Buck, June, Eddie, Elaine and Gwen.

Vale, Pop. A gentleman and an Amateur—VK3AHL

to back them up when he isn't on shift work, so you should not be short of a contact locally for check purposes or for a rag chew.

Those fellas, this is to be my last episode, those days are gone, I used to do them, but I like to let you all will take this opportunity to thank those that wrote to me with little bits and pieces, also those who subscribed verbally whether consciously or unconsciously to the notes. To the Editor I still write antennas like the prints and amateur, I know you are for being against with the blue pencil. To see and all, I wish you a MERRY XMAS which will be only three weeks away when you read this. Best 73, Keith 3JC.

SOUTH WESTERN ZONE CONVENTION

The zone has been very active this month with a very well attended Convention, held in Warrnambool on 1st October and 1st November. The first Ham to arrive was Neville 3ACN from Bendigo and from 3 p.m. onwards on Saturday night the first arrivals were QTH 3WNS and received a cup of tea and bookings. Most of the cars were mobile and were called in by Ted 3PS and Bill, also John 3HW of Ballarat helped us to contact the mobiles, many thanks John 3ACN and Bert 3EKK and Neville 3ACN.

The Dinner was held at Eckers Hotel and JABT proposed the toast to the W.L.A., after

which the Mayor of Warrnambool, Cr. P. O'Sullivan, officially opened the Convention and spoke on radio and how the Amateur movement over the years had helped radio, radio and tv in today's standards. Bob 3ML replied to the Mayor and explained the functions of the W.L.A. and benefits of membership and enjoyment of Amateur Radio as a hobby.

The general meeting took place and many zones were represented, the main discussion being in connection with emergency. JABT was elected equipment officer to ascertain who could come on in an emergency, so please let Jim have a note of your equipment that is able to be operated by batteries and can be carried. It is also frequency of crystals and v.t.o. controlled.

The fox hunt, which was to take place after the meeting, was cancelled as SACK brought some beautiful films of W.L.A.s. After these films we had a display of vintage cars and a class of vintage cars. We adjourned for supper when the QRM was terrific as you can imagine.

On Sunday morning, the tx hunt took place on 50 mks, the tx being hidden by INA, 3PS, and 3EQQ. The tx was not found as 3NA's car pointed out the excellent location and they certainly buried it deep.

Harry 3MF conducted a few of the boys through the local streets also showed them his radio controlled gate at his QTH.

During Sunday afternoon, the second tx hunt took place. It was located under the wharf by Bill 3KDE. He was awarded the barometer and thermometer perpetual trophy donated to the zone by the Geelong Amateur Radio Club.

The Scramble took place in a Warrnambool park and was won by Gordon 3AGV of Coiac, who contacted seven stations, second place went to Bill 3KEE, and Bill 3AWB was third.

This brought the active side of the Convention to a close and we turned to Bill Wines' QTH where his wife Lesley, Mrs. Olive Russell and Mrs. Dorothy Moffatt prepared afternoon tea for which we thank them.

George 3ADM and his XYL also made the trip and camped overnight at the foreshore. We also contacted his son, Ray 3ANB, at St. Ives, N.S.W., also Ron 3OKC who has a very fine b.f. signal.

WESTERN ZONE

We were pleased to welcome members together with their XYLs and harmonics 'n Stawell last month. The occasion was the State Convention which we had the pleasure of holding in our zone. Certainly hope that everybody enjoyed their week-end in the Grampians area.

Our Zone Convention was also held during the week-end. All office bearers were re-elected, namely: President, Hersh 3NN; Vice-Presidents: Gordon 3GW and Bert 3EKF, Secretary and Treasurer: Bill 3AKW.

Merv 3AFO, of Horsham, seems to have

been one of our busiest members recently.

He has built a new shack and has already

mechanics than radio; he has completed building his own motor car, it is built to midge motor car specifications.

Chas VRIH, of the Gilbert Islands, seems to be enjoying life up there. Hope to be able to work you next year Chas when I have a higher powered tx operating.

MOORABbin AND DISTRICT RADIO CLUB

At the general meeting held in our rooms on Friday, 18th Oct., it was decided to re-introduce the new fixture by having on the 20th mks. EME 3EMX except the first meeting to be open to members on suitable gear and also the construction of loops, and I should be able to inform you of our projected movements in the next issue.

The White Elephant night on Friday evening, 8th Nov., was quite a success, much gear exchanged, fun had with a little monetary assistance to the club. A Type 122 and a Type 11 were passed in.

The Annual Picnic is to be held at Toorawong Reservoir near Whittlesea on 13th Dec., and a good time is expected both by members, XYLs and harmonics.

It has been decided to put a party into the new Embroidery group comprising the National Field Day, using our club call sign, 3APC. This will be organised on a three-branch basis, and we expect to score well, so clubs and zones, look out for that perpetual trophy. We may snaffle it!

QUEENSLAND

BRISBANE AND DISTRICT

OK, so I grooved about t.v.l. last month, but the h.f. boys are not being troubled by gun-toting neighbours who are making like Maverick or Wyatt Earp for having their "one-eyed monsters" fought up. But the old gang of Whistlers of t.v.l. is covering the McWhales to play havoc with Channel 9, has me tricked, but I do know that the T.V.L. Committee will do their darndest to clear things up. So I suggest you contact "Thibby" Scholz, 4HFR who lives in the suburb of Normandale, 29 Stawell Street. What say Thib?

Talking about v.h.f. It looks as though two is being populated again in between JA breakthroughs on six. Noticed a nice two mks yagi above the six mks one at the QTH of Tom 4ZBM. With the population on the v.h.f.s. and absence of stations on the h.f.s., it looks as if it would be one of the limited boys who would make the first W.A.B.E. (Worked All Brisbane Suburbs).

On the subject of beams, it costs at least £22 to have a t.v. antenna erected, but Harry 4HIA found a wonderful substitute. He had been using "Rabbit Ears" and just for the fun of it, he connected his 20 mks quad onto the picture maker, turned the quad towards the

YOUR STATION COMPANION, the . . .

Aust. Radio Amateur CALL BOOK

Published by Wireless Institute of Aust.

Available now from

DIVISIONS OF THE W.L.A. AND
LEADING BOOKSELLERS IN
ALL STATES OF AUSTRALIA.

ORDER YOUR COPY

6/- Postage 6d. extra

1959-60 EDITION CONTAINS:

- An up-to-the-minute listing of Station Call Signs and Addresses of Licences of Transmitters. Stations licensed in the Commonwealth of Australia and Territories, and W.L.A. Listener's No's.
- Over one thousand additions, alterations and deletions since the last edition, making more than five thousand amendments since the 1954 issue.
- DX Countries, Prefixes and their Zones.

summit and found that it worked wonderfully. Went to hear something funny? His son has an indoor antenna on his t.v. rx and a t.v. antenna salesman urged him to buy an outdoor multi element array because "an indoor antenna is useless".

One landmark in Langstone Avenue, just two houses and a smaller one from Brisbane Airport, has disappeared. Tom 4TT had a quad in his backyard, now he has a t.v. antenna on the front of his house and no quad. I'll bet the quad or some other beam goes up when the novelty dies off and the eye-strain starts.

It looks as though Del 4EJ will be on the air a lot more in the near future. Del is retiring soon after a lifetime as Methodist Minister. Isn't Ham Radio a hobby? I've had many an enjoyable QSO with Del when he was in Warwick and Brisbane from QTHs as far apart as Brisbane and Guan, but have never seen him since. Last week I saw a photograph of him taken by a friend of mine in a Parish magazine and had to be told who it was.

Frank 4ZM was quite concerned about complaints that he didn't take the 30 mks hook-up every Sunday. He has a "week-end" up at Tewantin and is an enthusiastic amateur. In fact he had a strange idea that he was going to make a thousand pounds a few weeks ago by landing "Tim-the-Bream". He asked me to say that if he had more than three or four regulars he would be able to understand the occasional week-end go, boys, everyone needs an occasional week-end go.

As is usually the case, the fourth Friday of December falls during the Christmas break and there won't be any December general meeting, the next being on the fourth Friday of January 1960. Talking about dates, an anniversary a couple of weeks ago went unremembered. On Saturday 2nd September, twenty years ago, a lot of the boys received a telegram telling them to stay off the air because there was likely to be a war. It came the next day, 3rd September, 1939; it came the next day, 3rd September, 1939; it came the next day, 3rd September, 1939.

Well, gentlemen, I've got to cut it short, but hope to have more gossip after the Christmas break. I hope you all have a happy Xmas as say to wish all our members, their families, my fellow scribes in the other Divisions, and our Editorial and printing pals in Melbourne, a very Merry Christmas and a Happy and Prosperous New Year.

See you in 1960—4.P.R.

SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division was held to a capacity house in the clubrooms at 17 Waymouth Street, and took the form of a buy and sell night which, due to the laws in that State, is only another way of saying that an auction night was held. We in VK5 were extremely fortunate in having run a handsome, athletic, efficient brained and romantic looking auctioneer, and when I stepped up on to the auctioneering table after being introduced by my partner in crime, Norm Gorman, the room was filled with hysterical and madame just had to be heard to be believed. When order had been restored, when the red tomatoes and broken eggplants had been swept up, when some kind person had assisted to remove the debris from my clothes, then and there was a general "Yay" from the audience but note that no reference has been made to anything that happened before the auction for the simple reason that nothing of any note happened. The meeting was opened by the chair of the Wombeyan committee, Mr. Leith Leitch, the chair of the Divisional Meeting, Brian 3CA, and despite his moving appeal for general business nobody was having any, and after new members, State correspondence, Federal correspondents, I.C.C.E.M. news, and other two other matters of minor importance, the business part of the meeting was closed and the distribution of cards preceded the smoke.

A ballot was conducted for the disposal gear and those who were successful have no doubt been advised by now. The amount of gear for sale was not up to previous nights, but due to the enthusiasm of the bidders and the repartee between the bidders and the auctioneer, and other sundry interruptions, the meeting closed at 11 p.m. although Gordon 3XU threw the last of the audience out at 11:30 p.m. The meeting naturally was carried officially, as unofficially, on the footpath for some time, although I could not but note that Leith SLG practically ignored the fire hydrant, only occasionally giving it a look of disdain as he talked. The fire hydrant, probably re-

remembering their last argument regarding the merits of c.w. and phone, gave him look for looks with his fist, resulting in a slightly redder face than the hydrant.

Talking to the President of the VK5 Division, Brian SCA, whom we will remember has just returned from his annual inspectional tour, I was informed that the VK5 signal club of the Wombi-Wombi tribe in the far, far North, he told me that he was not feeling his best whilst away and was glad when he could come back to our fair city. The chief of the Wombi-Wombi tribe, who is known as the VK5 Divisional chief, said in tones more of sorrow than anger, "Big city ched, him no good, him weak in stomach, him no like witchetty grub, him pluffy washout!"

Noticed Jack SJS in the audience at the meeting and appeared to be enjoying himself. Active these days on 285 Mc., he will have the voice of a siren, and as I left the meeting he was entertaining a large group of the younger members with tales of the "good old days," and believe me there is no one in VK5 who knows more of those days than he does. I can't speak for him as the biggest member on this side of the black stump.

There is no doubt about it, it is either a feast or a famine. Two months silence from the S.E. gang, and then Claude SCH arrives, Col SCH sends me a letter, and to top it all, Stuart SMS comes along, the most remarkable character I have ever seen. They all should keep the wolf away from the door for this month at least, to say nothing of keeping my palsey-waly the editor happy. He was getting quite worried because I was writing almost nothing each month. But that red pencil down at news time.

Claude SCH is due for annual holidays as soon as he returns to the Mount from the big city, so possibly he will be heard on 40 at odd times during the day. He has a big entertainment programme on for the shack, so possibly he will concentrate on that instead.

Tom STW is back on 40 with telephony after quite a break and seems to be getting quite a kick out of his transmitter. He will be looking for me. Oh! Stuart SMS has his new tx on the air and is quite satisfied with results. Bandswitched 80-10, with a Gelesco exciter, it finishes up with an 813 and has plenty of wallop.

TYPE 65

General purpose with low frequency response suitable for lively halls.

TYPE 66

P.A. use where less low frequencies are required than the 65 with a lift in the middle frequency to ensure high output without feedback.

THREE INDIVIDUAL TYPES IN THE FAMILIAR "65" CASE



ZEPHYR PRODUCTS PTY. LTD.

58 HIGH STREET, GLEN IRIS, S.E.6, VICTORIA

PHONES: BL 1300, BL 4556

PAPUA-NEW GUINEA

The Council of this Division suddenly came to the conclusion that "no one ever tried to get into the Territory and left because of our doings". The writer has taken the job on for a trial, but hopes to see it through regularly, if at all possible.

There was a burst of quad fever throughout the year. The two Moresby types most inflected are Doug 981B and John 981R. Doug has his up on a 30 ft. tower now, and except for some fine chases, he has not had to go back to the DX field. In such so, that in a few of his backyard contacts on 15 with Robbie 980R, there are frequently a stack of Europeans trying to break in. John is awaiting a tower to sit him on, but a working bee has been organised and that problem will be no problem for any large antenna from Moresby kilowatt. Yes, John really has that much power and has a set of spare 16 amp. fuses handy every time he sets the rig up these days. John seems the latest victim of power transmission over this island, and the result is a massive power tranny that had so many windings it took four new ones to do the same job.

An earlier burst of quad activity appears to have hit Samarai of recent years as there are four in the air over there and all look very healthy. I am sure the prize with his rotating pole-mounted quad.

The latest run of DX contests has come and gone. The static level during the phone section of the VK/ZL Contest was not fun and games, but to think Bob takes of your clothes before stepping off your launch to miss the attending dinghy, hil!

On the week-end of 24th-25th October, southern members participated in the Jamboree of the A.R.C. The ARCS were invited to compete to them over those two days by Scouts from the 13th Hobart Troop, and all three chaps did a wonderful job in giving the lads a lively introduction to Amateur Radio. The respective XYLs certainly deserve a mention for their help and support, and for coming off from the usual duties, but also for allowing their homes to be invaded. Bob TAF also deserves a mention for loaning his 12E set as the means of maintaining communication between the Scout Headquarters and the three mentioned stations. Although contact with the Jamboree station VE1JAM in Canada was not established, many Amateurs in various parts of the world entered wholeheartedly into the venture, despite the fact that the phone section of the "CQ" Contest closed, and we in Tasmania were still there.

The v.h.f. boys have been busily preparing the rules for the conduct of an intra-State V.H.F. Contest for 50 Mc. and above, which they hope to hold over two week-ends in either February or March of next year, and hope to have the rules finalised in a future issue.

Although Interstate contests will not assist the points score, yet these chaps will be looking for any mainland v.h.f. boys at the same time.

Since the last notice, two Contests have come and gone, the c.w. section of the VK/ZL Contest, and the phone section of the "CQ" Contest. All bands played their part in both contests. Jack 7JB made 275 contacts in the c.w. VK/ZL Contest, and Ken STA had 100 in the phone section. In the phone section of the "CQ" Contest, I overheard WBBWV complain that few stations from VK enter the phone contests. This complaint rings rather strange to me as an ardent c.w. man, as I find very few VK stations on the air on 160 on 40 at times, and yet there are always phone stations nattering away on those same bands.

Look for our Divisional Treasurer, Snowy TCH, on the lower frequency bands over the public holidays and in the weeks ahead of next summer. Snowy will probably be mobile marine on the yacht Moorina and looking for contacts on either phone or c.w.

Alec TAX continues to be ill in health. We wish you a speedy recovery Alec. Jack 7JB is now employed by a very well known wireless electrical company, and I am told, Ted TE5 from the same establishment, he is studying the mysteries of t.v. receivers from the viewpoint of servicing. Consequently, both schools are very little time on the air, as the evenings are spent on homework.

The excellent address by Joe TJB on t.v. receivers at the November meeting in the South was taped for the benefit of the other zones. Len TLE also made slides, and Len TLE produced a most interesting talk on the t.v. receiver under scrutiny. We ordinary beings are now much wiser about these infernal machines, if only to the extent not to play around without sufficient test equipment.

George 7GC was on the air after the wireless exhibition trial abroad through Europe and America. It would be very nice to have an address from you taped George for playing at one of the meetings in the South. How about it, OM?

probably up to his neck in some new project which will be released to the waiting world in due course. Harold SZAB is another member of the missing brigade from the Upper Murray gang. However, my spy is hot on his trail and new details will arrive shortly. Now comes the time that I had almost forgotten as a Radio Amateur. None other than Cliff SCX. He is at present very busily engaged at ARBS, which is due on the air early in the new year, and among other worries and trials he has to cope with the fact that Neil SZAB is his brother-in-law. I was told to put that in the notes, Neil. Guess by whom?

Bob SAP is now back at Port Augusta and is happy in his work at the locomotive works, the details of which my pride will not permit me to mention. Bob has been with the Commonwealth Railways and the State Railways, and is now in the hardest working industry of all, shem! Every Amaturist thinks of Victor Harbour and his officer, Ron SKN. Pat is fairly active on the bands and Ron is mostly inactive, but let anything resembling an emergency happen in that area, then this pair are definitely active. That's the first time in the past few years has done quite a lot to keep the name of Amateur Radio before the public.

Heard Bill SHR in contact with Les SLC on 40 the other Sunday morning and a report to the ARCS that he was in London. That offered Les \$4 dollars if he could recognise Arch on the mike. Les battled with the problem for a couple of overs, and then went out and walked on some hot coals or lay down on a bed of nails or something, being in cut and thrust fashion, and then he was with the name quick as a flash, well almost. Arch refused to pay the \$4 dollars because he said someone had rung Les up on the telephone and told him, finally accusing me! How low can one get? Well, SDR 981R was in London and was completely surrounded by G4ZU theory and diagrams. The tower is up and it looks as if before long we in the big smoke will have to be putting fuses in our aerials whenever he points his beam East. John 981R who is a news commentator on ABC, has a new show "The Cull for same time, is getting things together for an onslaught on 80-40-20 etc., and he will be assured of a welcome to these ranks.

Pat SIK is of course to be heard on 14 Mc. and 70 Mc. only. He would be considered mad to try to suggest that he be heard on any other band and considering his results, I don't blame him. George SEC is occasionally heard on 40, mostly in contact with Gordon EXU, and his commercial interests keep him fairly busy and the rest of us are left to wonder.

George EXU was active from Ceduna on 7 Mc. whilst he was over there relaxing at D.C.A. I heard him in contact with 3WI from Hawker. Now, Graeme EXV and Col SKY were at the moment of writing switching out our four fold receiving Unit exams. We wish them both luck. Dave SBF has not been heard to any extent lately, but as he is busy with local E.P.S. work it is not to be wondered at. He has been heard on 160 with Don SDX on 80 at times, and in the weeks ahead of the school Forest. Fairly gives one the creeps doesn't it. The BBBBBlack FFFFForest.

One of the privileges of being old is that one can reveal now and then the inner story of some happening in the secure knowledge that few are left to doubt it. My view of the fact that the man now known as Fred, formerly reported in the editor, bless him, and also in view of the fact that Johnny ex-BKO (and about to be BKO again) is now no longer an 11 Mc. I can now tell the promised story of how I once pulled the short straw and had to make the 10 Mc. section. Johnny was not only a VK5 R.L. but was at times chairman of the Amateur Advisory Committee, and at the same time a keen and active Amateur, noted for his experimenting. I was a member of the committee and I recall the time when one night I switched on the receiver and there was SKO with thousands of signals, 10 kc. apart, from the top to the bottom of the spectrum. Now I ask you, lives there a man with a brain so fresh that he could have had his shot through? Yes, there does live such a man, stupid me. Did I ring up and give him the truth, did I? No, I did not, I attacked the situation with gun and explosives. When he answered the telephone and I exchanged words with him I said in a voice dripping with honey, "I am not ringing to complain, but just to find out how you have managed to get so many signals out of one single transmitter." This rocked him so much that he grabbed a chair, leaped on the harmonics production, and then excused himself on the plea of urgent business. The fact that the signal, plus all the harmonics, disappeared at the same time was

of course co-incidental. To this day he always refers to me as the worker of information on harmonic radiation, which only goes to prove that R.L.s are human beings after all. If he knew how many sleeping pills I took that night before he went off, he would be more amazed than he was.

Well, here we are again, December and all that it means. As I write this of course it is only October, and it is hard to enthuse about something that is months away. However, the VKS gang wish all the rest of VK the compliments of the season, we wish you all that you wish yourself, and we all hope that you will all have an enjoyable XMAS and a Happy New Year. Incidentally, I am awaiting his return with bated breath, in trying to convince him that Father Xmas will be a bit light on in the pocket this year. He has already presented me with five lists of what he wants for XMAS, and each one bigger than the last. I am going to tell him that Father Xmas has left him a pony, and I will be able to prove it, too!!!!

TASMANIA

Congratulations to Bob 7AJ on being the first of the Tasmanians to get a win in this season. Next time Bob take off your clothes before stepping off your launch to miss the attending dinghy, hil!

On the week-end of 24th-25th October, southern members participated in the Jamboree of the A.R.C. The ARCS were invited to compete to them over those two days by Scouts from the 13th Hobart Troop, and all three chaps did a wonderful job in giving the lads a lively introduction to Amateur Radio. The respective XYLs certainly deserve a mention for their help and support, and for coming off from the usual duties, but also for allowing their homes to be invaded. Bob TAF also deserves a mention for loaning his 12E set as the means of maintaining communication between the Scout Headquarters and the three mentioned stations. Although contact with the Jamboree station VE1JAM in Canada was not established, many Amateurs in various parts of the world entered wholeheartedly into the venture, despite the fact that the phone section of the "CQ" Contest closed, and we in Tasmania were still there.

The v.h.f. boys have been busily preparing the rules for the conduct of an intra-State V.H.F. Contest for 50 Mc. and above, which they hope to hold over two week-ends in either February or March of next year, and hope to have the rules finalised in a future issue.

Although Interstate contests will not assist the points score, yet these chaps will be looking for any mainland v.h.f. boys at the same time.

Since the last notice, two Contests have come and gone, the c.w. section of the VK/ZL Contest, and the phone section of the "CQ" Contest. All bands played their part in both contests. Jack 7JB made 275 contacts in the c.w. VK/ZL Contest, and Ken STA had 100 in the phone section. In the phone section of the "CQ" Contest, I overheard WBBWV complain that few stations from VK enter the phone contests. This complaint rings rather strange to me as an ardent c.w. man, as I find very few VK stations on the air on 160 on 40 at times, and yet there are always phone stations nattering away on those same bands.

Look for our Divisional Treasurer, Snowy TCH, on the lower frequency bands over the public holidays and in the weeks ahead of next summer. Snowy will probably be mobile marine on the yacht Moorina and looking for contacts on either phone or c.w.

Alec TAX continues to be ill in health. We wish you a speedy recovery Alec. Jack 7JB is now employed by a very well known wireless electrical company, and I am told, Ted TE5 from the same establishment, he is studying the mysteries of t.v. receivers from the viewpoint of servicing. Consequently, both schools are very little time on the air, as the evenings are spent on homework.

The excellent address by Joe TJB on t.v. receivers at the November meeting in the South was taped for the benefit of the other zones. Len TLE also made slides, and Len TLE produced a most interesting talk on the t.v. receiver under scrutiny. We ordinary beings are now much wiser about these infernal machines, if only to the extent not to play around without sufficient test equipment.

George 7GC was on the air after the wireless exhibition trial abroad through Europe and America. It would be very nice to have an address from you taped George for playing at one of the meetings in the South. How about it, OM?

INDEX TO VOLUME 27-1959

ANTENNA, ETC.

- A Multiband Antenna System for the Newcomer ... Dec. p.3
 Mounting Bracket for Mobile Antenna ... Jan. p.12
 Series Phased Array, Mark ? Feb. p.5

BOOK REVIEWS

- "Ameaco Amateur Radio Theory Course" ... May p.11
 "A.R.R.L. Single Sideband Handbook" ... Jun. p.21
 "Command Sets" ... May p.11
 "CQ Anthology" ... Jul. p.19
 "CQ New Mobile Handbook" ... Jul. p.19
 "CQ New Sideband Handbook" ... May p.11
 "G.E. Transistor Manual" ... Nov. p.3
 "Loudspeakers" ... Jul. p.19
 "Magnetic Sound Recording" ... Sep. p.14
 "Mobile Radio Telephones" ... Jul. p.19
 "Multivibrator Circuits" ... Sep. p.14
 "Performance-Tested Transistor Circuits" ... May p.11
 "Practical Robot Circuits" ... Sep. p.14
 "Race for Life" ... Mar. p.17
 "Radio Engineering Formulae" ... Sep. p.14
 "The Radio Amateur's Handbook" ... May p.11
 "The Radio Handbook" ... Jul. p.19
 "Tube and Semiconductor Selection Guide, 1958-59" ... Jul. p.19

CONTEST RESULTS

- National Field Day Contest, 1959 Results ... Apr. p.14
 Remembrance Day Contest ... Dec. p.12
 Ross Hull V.H.F. Contest Results, 1958-59 ... Jun. p.23
 1958 VK-ZL DX Contest Results ... Apr. p.13

MISCELLANEOUS

- A Conference of Compromise Dec. p.15
 A.C. Power Supply for the No. 22 Set ... Mar. p.3
 A Simultaneous R.F. Bridge Indicator ... Mar. p.5
 Break-In at Its Best ... Dec. p.9
 Brief Details of Surplus Radio Equipment ... Mar. p.7
 CQ, CQ, CQ Australian Amateurs de la Federal Executive ... Apr. p.9
 Cyclone "Connie" Visits VK4 ... Apr. p.17
 Electrical Shock: Fact and Fiction ... Dec. p.6
 Freedom of the Air ... Feb. p.12
 Geneva and the Amateur Service ... Jun. p.3
 Geneva Report ... Nov. p.9
 Hints and Kinks:
 Audio Test Tone ... Apr. p.21
 Cleaning Greasy Hands ... Jul. p.17
 Enlarging Chassis Holes ... Jul. p.17
 Fibre-Glass Whips ... Apr. p.21
 Neutralisation of Single-Ended Fins ... Jan. p.14
 Neutralising the Stage After the Geloso V.F.O. ... Jan. p.14
 Portable Antennas ... Apr. p.21
 Shunt Coupled Pi-Couplers ... Apr. p.21
 Transistorised B.F.O. for Mobile Use ... Jul. p.17
 6BE6 Preamplifier for Both Hi- and Low-Z Mikes ... Sep. p.4
 How Good are Your R.F. Chokes? ... Sep. p.8
 H.T. Control Circuit ... Sep. p.4
 John Moyle in Geneva ... Oct. p.15

JOINTING OF ALUMINIUM AND ALUMINIUM ALLOYS

"Just Like QST Except . . ." Nov. p.10

Loran C.R.O. Indicator Model AP/APN-4

Meet the Other Amateur and His Station:

Alan Brown, VK3CX ... Jan. p.12

Andy Roudie, VK3UJ ... Sep. p.11

Bill Hehir, VK3RE ... Feb. p.15

Bob Elms, VK6BE ... Jan. p.13

Ron Hugo, VK6KW ... Apr. p.17

Mr. Fairhall, M.H.R., Talks to the Amateurs of Australia

Our Hobby on Display ... Aug. p.6

Parliamentary Comments on Proposals to Cut Amateur Frequencies

Polarised Relays, Their Use in an Automatic Keyer

Short Wave Listening

Simple Sideband:

Parts One and Two ... Apr. p.5

Parts Three and Four ... May p.3

Parts Five and Six ... Jul. p.8

Parts Seven and Eight ... Aug. p.9

Parts Nine and Ten ... Sep. p.5

Parts Eleven and Twelve ... Oct. p.11

Technical Topics:

Antenna for Field Day or Portable Operation

Choosing Condensers

Netting

The Bass Strait Ferry—VK7 End

The Instant R.F. Indicator

The "Mickey-Match"

The Versatile Standing-Wave Ratio Indicator

Tropospheric Propagation at V.h.f.:

Part One ... Aug. p.3

Part Two ... Sep. p.3

W.I.A. Official List of Countries for DXCC

W.I.A. Victorian Division's New Premises

Why So Few Entrants in the N.F.D. Contest?

ZL1PPJ—Scout Jamboree's Station

May p.20

RECEIVING

Adjustment Procedures for V.h.f. Converters

An Economical Receiver for S.W. Listening

A Noise Limiter for Mobile Work

A Simple Squelch Circuit

A Transistorised Q5-er Receiver,

Part Six, Section Two

Modifying the AR8 Receiver

Part Three, Section Two

Modifying the AR8 Receiver

Painless Noise Limiting for 13/8

Proposals for a Mobile Receiver Without H.T.

Putting Sense into Transmitter Hunting

Quartz Crystal Filters

Solid State Radio Frequency Amplifiers:

Part One ... Apr. p.3

Part Two ... May p.7

The Geloso Receiver Front End Unit

The S-9'er Mark II

Three-Band Converter

Wireless Sets Nos. 22 and 122

TELEVISION

Your Vision and Television

TRADE REVIEWS

Geloso V.H.F. V.F.O. ... Jul. p.16

The Geloso Receiver Front

End Unit

Nov. p.5

TRANSMITTING

A Sideband Man's V.F.O. ... Aug. p.15

A Two-Stage Transistor Tx

Jun. p.18

Conversion of the SCR522 Tx

to 3 Metres

Plate Modulated D.S.B.R.C.

or D.S.B.S.C.

The Sledge-Hammer Special—

A 2 Metre Transmitter

Using BC459 with V.h.f. Over-

tone Oscillator

Wireless Sets Nos. 22 and 122

Jul. p.13

HAMADS

1/- per line, minimum 3/-.

Advertisements under this heading will only be accepted from individuals or members of clubs desirous of disposing of equipment which they own or have in their possession. Copy must be received by 5th of the month, and remittance must accompany advertisement. Calculation of cost is based on an average of six words a line. Dealers' advertisements not accepted in this column.

FOR SALE: Pye V.H.F. Mobile Xmitter, crystal controlled, 156-172 Mc., F.M., complete with 829B and vibrator supply £8.10, 17 Jasper St., Noble Park, Vic.

FOR SALE: 2m. Beam, 4 over 4 over 4, copper elements, pipe frame on 40 ft. of 1 inch pipe mast, with guys and 40 ft. co-ax. £7/10/0, R. Neal, 11 Xavier Street, North Essendon, Vic.

SELL: AR7 Com. Receiver complete with power supply and speaker in rack. Recently overhauled; fitted improved N.L. performs well. Price £45. L. B. Fisher, 11 Erskine Ave, Cheltenham, M.S. 2, Vic. (Phone XF 4932).

SELL: BC348 extensively modified, 121/D.C., 50 Mc. Q5er, S Meter 0-500 µA, extra audio, 6AJ5 r.f.s., sep. r.f. and a.f., top performer, £35 plus freight. 20-15/10 xtal conv., 6AG5, 5J6, £7. L. Hoey, M.S. 74, Clifton, Qld.

SELL: Command Trans., 7-9 Mc., £4. Geloso V.F.O. 4/101 used, £6. Tuner Battery Charger, 6V-2A, 4-2V, at 1A, £4. C.R.O. for modulation tests, 2B in, with a.c. sweep, £5. 5BP1 C.R.O. tube, 15/-, 3BZ Transmitter, 12V, £9. Gold Var. Reluc. Pick-up, No. 500, unused, £2. VCR139A C.R.O. tube, £1. Command Rcvrs., 3-6 Mc. £4; 6-9 Mc. £4. Apply W. Stevenson, 11a Maud St., Ormond, Vic.

WANTED: AMR300 Receiver in good condition. Reply D. Sidey, Muttaburra, N.S.W.

WANTED: Command Receiver, 3-6 Mc. H. B. Doblyn, 42 Walnut Avenue, Milpara, Vic.

WANTED: Prop. Pitch Motor. Price, etc., to A. B. Hollesbon, 28 Nelson St., Port Pirie, S.A.

WANTED TO SELL: From deceased estate, incomplete tx and modulator with power supply chassis. Each unit in metal screened cabinets. Must sell, best offer accepted. High quality components used throughout. For inspection, G. M. Hull, 428 Bourke St., Melbourne.

Seasons

Greetings



At this time, we of the Amalgamated
Wireless Valve Company extend to our
many friends, old and new, a very merry
Christmas and an enjoyable and prosperous
New Year.



AMALGAMATED WIRELESS VALVE COMPANY PTY. LTD.

R. H. CUNNINGHAM PTY. LTD.

on behalf of their
many world-famous
overseas principals, extend . . .

Xmas Greetings
to amateur friends
throughout Australia . . .



with special news from GELOSO, of this—

**FRONT END RECEIVER
CONVERTER UNIT**

A complete kit including cabinet, power supply, and chassis—fully wired and checked. Ample bandspread on 10, 11, 15, 20, 40, and 80 metres; 4.6 Mc. I.F. output; trimmer condenser for aerial circuit.



GELOSO ML209/FE Front End Receiver Converter Unit as used in Geloso G209/R Receiver.

Amateur Nett Price: £24/10/0 plus Sales Tax.

GELOSO ML209/CH Front End Receiver Converter Unit Foundation Kit,

Amateur Nett Price: £10/17/6 plus Sales Tax.

OBtainable from all leading DISTRIBUTORS

Sole Australian Factory Representatives:

Cable: "Cunnig"

R. H. CUNNINGHAM PTY. LTD.

VIC.: 8 BROMHAM PLACE, RICHMOND, JB 1614
Q.L.D.: 43 BOWEN STREET, BRISBANE, 2-3755

N.S.W.: 16 ANGAS ST., MEADOWBANK, WY 0316
S.A.: 14 STAMFORD COURT, ADELAIDE, 51-6392